

2



VORTEX SHEDDING BY BLUNT/BLUFF BODIES AT HIGH REYNOLDS NUMBERS

Volume II of IV
Cylinders, Octagon, Hexagon

B. R. Merrill

March 1993

Final Report

DTIC
ELECTE
MAY 05 1993
S B D

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

93 5 04 162

93-09621



PHILLIPS LABORATORY
Directorate of Plans and Programs
AIR FORCE MATERIEL COMMAND
KIRTLAND AIR FORCE BASE, NM 87117-5776

This final report was prepared by the Phillips Laboratory, Kirtland Air Force Base, New Mexico, under Job Order 9993XX21. The Laboratory Project Officer-in-Charge was Bruce R. Merrill (XPXS).

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely Government-related procurement, the United States Government incurs no responsibility or any obligation whatsoever. The fact that the Government may have formulated or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication, or otherwise in any manner construed, as licensing the holder, or any other person or corporation; or as conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This report has been authored by an employee of the United States Government. Accordingly, the United States Government retains a nonexclusive royalty-free license to publish or reproduce the material contained herein, or allow others to do so, for the United States Government purposes.


This report has been reviewed by the Public Affairs Office and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nationals.


If your address has changed, if you wish to be removed from our mailing list, or if your organization no longer employs the addressee, please notify PL/XPXS, Kirtland AFB, NM 87117-5776 to help us maintain a current mailing list.

This report has been reviewed and is approved for publication.


BRUCE R. MERRILL, GS-14
Project Officer

FOR THE COMMANDER


MICHAEL C. DIECKHOFF, GM-15
Chief, Studies and Analysis
Branch


MICHAEL E. HAVEY, Col, USAF
Director, Plans and Programs
Directorate

DO NOT RETURN COPIES OF THIS REPORT UNLESS CONTRACTUAL OBLIGATIONS OR NOTICE ON A SPECIFIC DOCUMENT REQUIRES THAT IT BE RETURNED.

REPORT DOCUMENTATION PAGE			Form Approved OMB No 0704-0188	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small>				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 1993	3. REPORT TYPE AND DATES COVERED 17 Jun 91-31 Jul 92	
4. TITLE AND SUBTITLE VORTEX SHEDDING BY BLUNT/BLUFF BODIES AT HIGH REYNOLDS NUMBERS, Volume II of IV-Cylinders, Octagon, Hexagon			5. FUNDING NUMBERS PE: 62601F PR: 9993 TA: XX WU: 21	
6. AUTHOR(S) B. R. Merrill				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Phillips Laboratory Kirtland AFB, NM 87117-6008			8. PERFORMING ORGANIZATION REPORT NUMBER PL-TR--92-1053	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release: distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This report documents the analysis of vortex shedding data collected by the Phillips Laboratory at the U.S. Air Force Academy Subsonic Wind Tunnel facility. The analysis is primarily of the power spectrum of the vortex shedding as seen in the force and moment coefficient power spectra. The shedding frequencies as seen in the power spectra are used to analyze for the Strouhal number. The analysis suggests that shape and orientation in the wind field have an effect on the shedding of vortices.				
14. SUBJECT TERMS Vortex shedding, Vortices, Aerodynamic forces, Coefficients, Drag, Strouhal number			15. NUMBER OF PAGES 184	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT SAR	

CONTENTS

	<u>Page</u>
CYLINDER AT 0-DEGREE DECLINATION (1130.5 gm)	1
CYLINDER AT 0-DEGREE DECLINATION (1029.5 gm)	8
CYLINDER AT 30-DEGREE DECLINATION (898.1 gm)	26
CYLINDER AT 45-DEGREE DECLINATION (897.0 gm)	74
OCTAGON AT 0-DEGREE DECLINATION (1659.3 gm)	123
HEXAGON AT 0-DEGREE DECLINATION (1615.0 gm)	151

DTIC QUALITY INSPECTED 5

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

DATA REPORT

SHAPE:	CYLINDER
DECLINATION [THETA (degrees)]:	0
DIMENSIONS [LxWxH (in)]:	8.1 x 8.1 x 10.0
WEIGHT (gm):	1130.5
TORSION FREQUENCY (Hz):	Not Available
LATERAL (SIDE BEND) FREQUENCY (Hz):	Not Available
NORMAL (AFT BEND) FREQUENCY (Hz):	Not Available
AZIMUTHS (degrees):	0

GRAPH CORRECTIONS:

- The PSD and PSD Integral values of the **ROLL** moment coefficients should be divided by 144.

OBSERVATIONS:

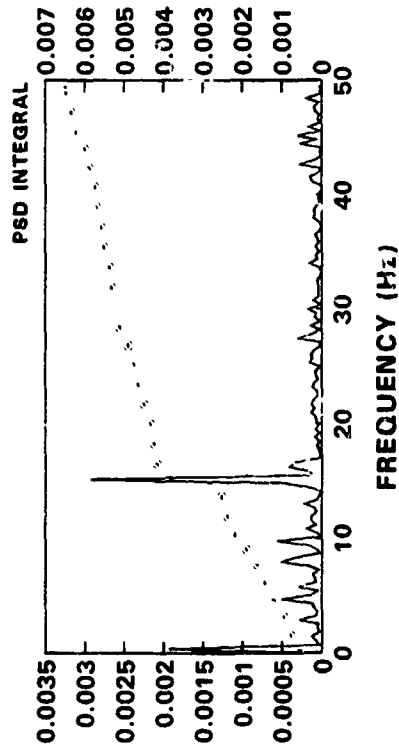
- Large mean coefficient for lateral force and moment at $Re = 3.18E05$ suggests bad data.
- Shedding signature not observed
- 15.176 Hz spike observed in the normal force data. The spike is not as prominent in the normal moment data which suggests a lack of coherence in the 15.176 Hz spike.

MEAN COEFFICIENTS

	REYNOLDS NUMBER (1E05)			
	2.12	3.18	4.23	6.35
NORMAL FORCE	.493	.529	.393	.456
NORMAL MOMENT	.700	.729	.508	.548
LATERAL FORCE	.111	.552	.507	-0.130
LATERAL MOMENT	.121	.654	.649	-0.893
ROLL MOMENT	.115	.179	.127	.772

The values for the roll moment coefficient are in units of in\ft and should be divided by 12 to be a unitless coefficient.

FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**

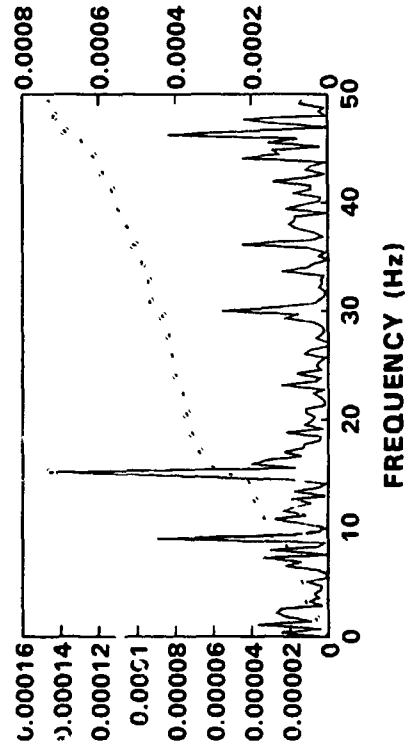


— PSD — PSD INTEGRAL

CYLINDER - HT 10 - THETA 00 - AZ 000

3

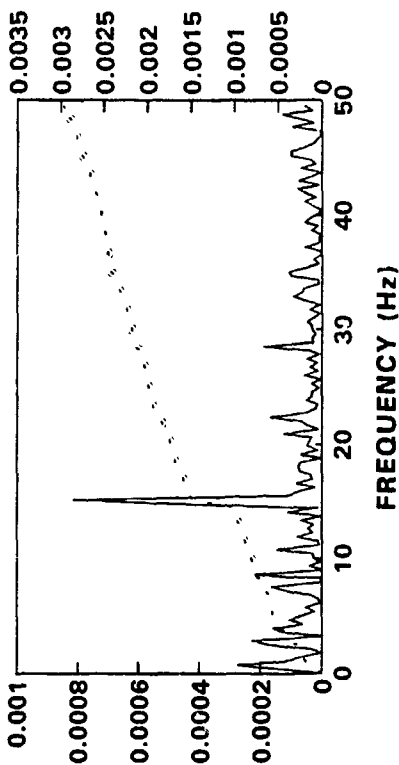
FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 10 - THETA 00 - AZ 000

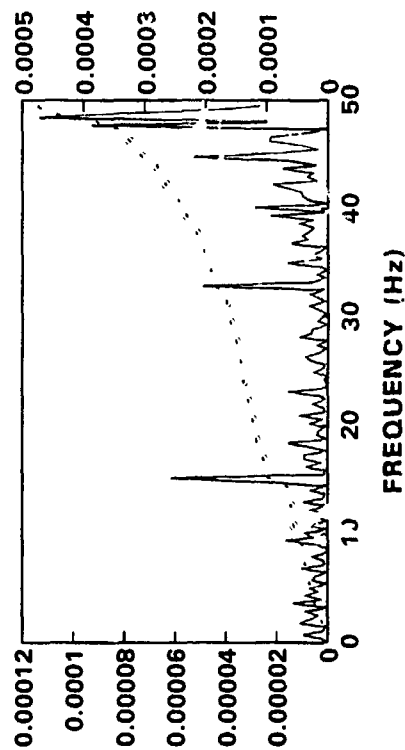
FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 10 - THETA 00 - AZ 000

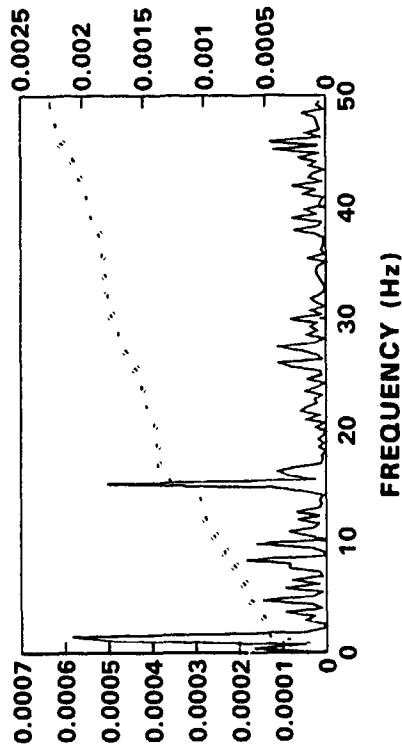
FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

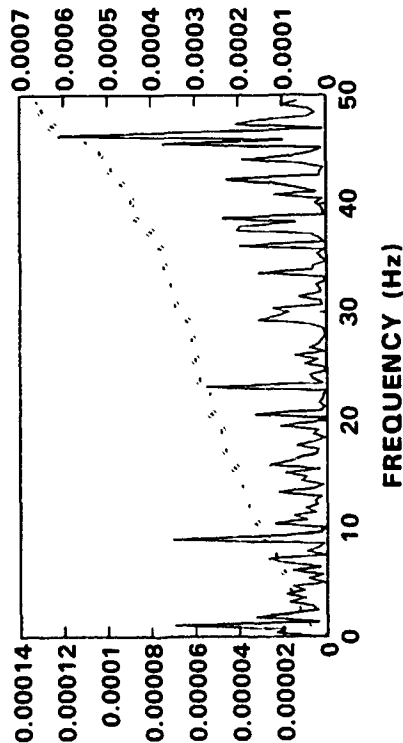
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



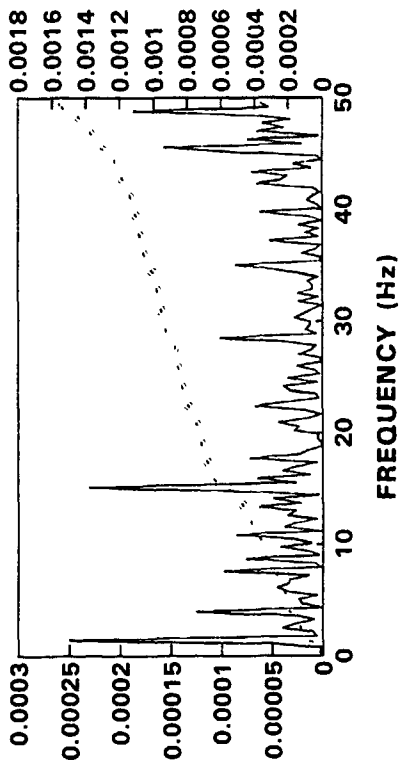
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



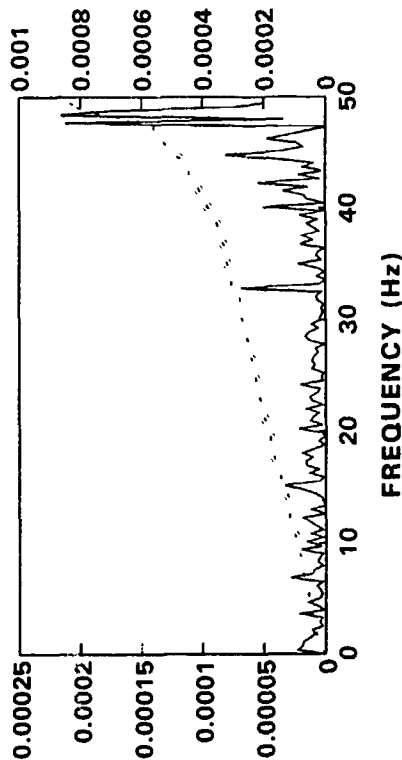
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



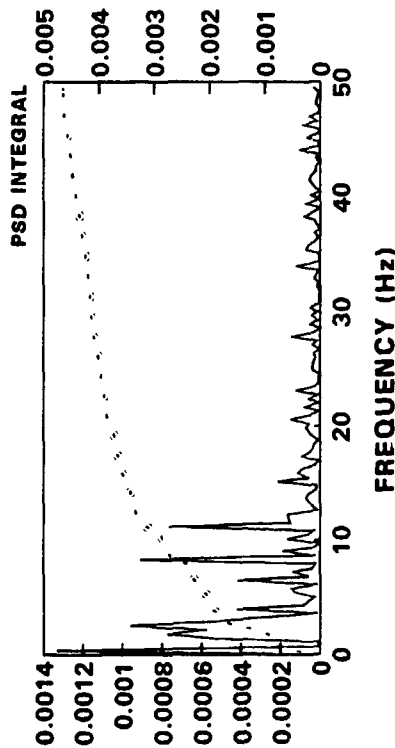
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



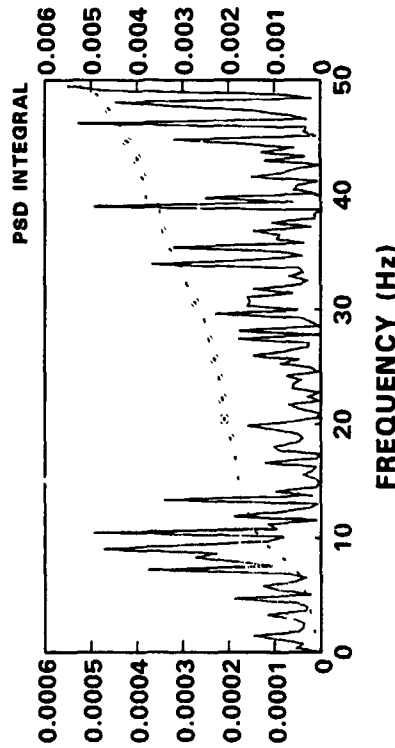
CYLINDER - HT 10 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



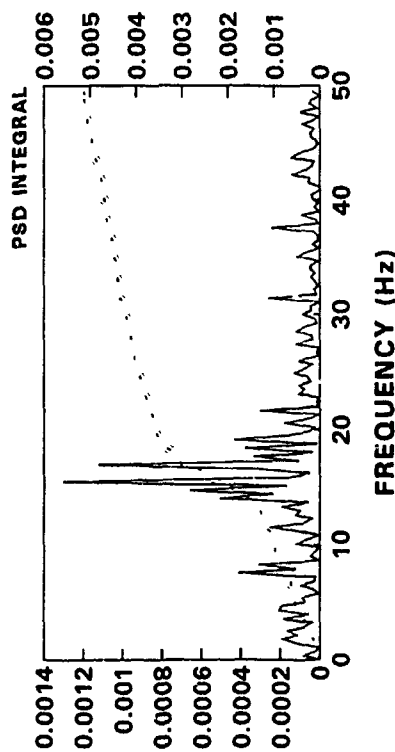
CYLINDER - HT 10 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



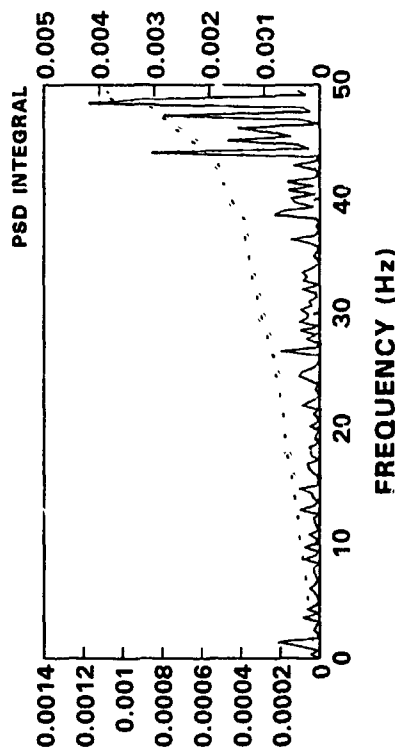
CYLINDER - HT 10 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



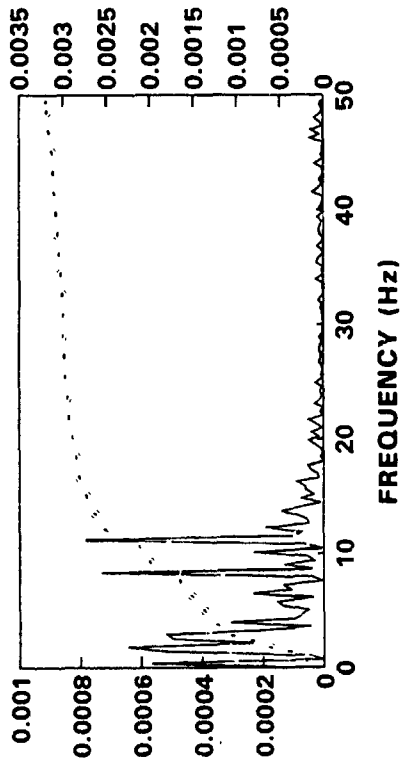
CYLINDER - HT 10 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 10 - THETA 00 - AZ 000

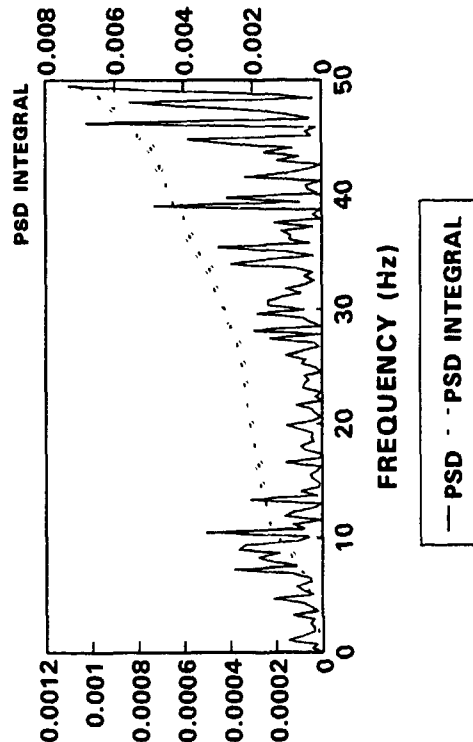
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



CYLINDER - HT 10 - THETA 00 - AZ 000

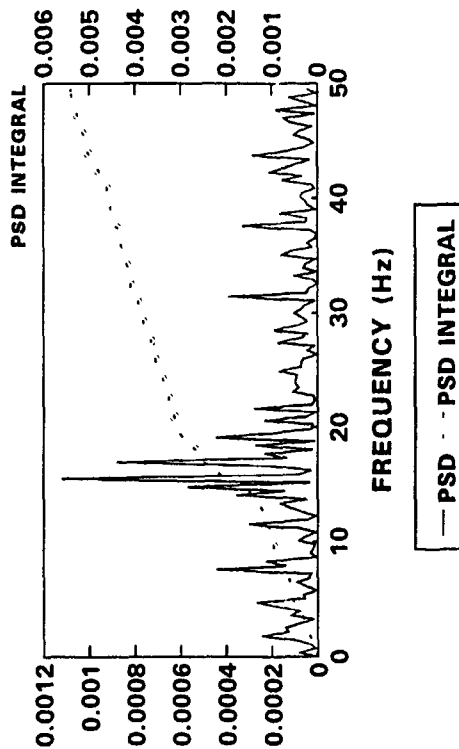
6

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



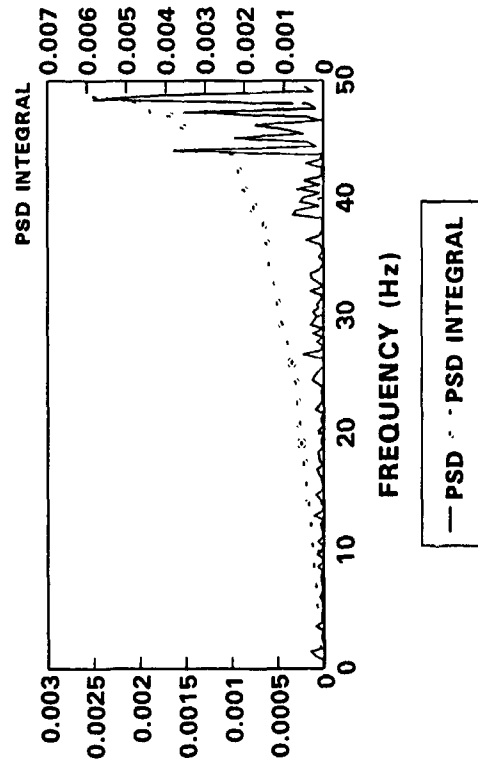
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



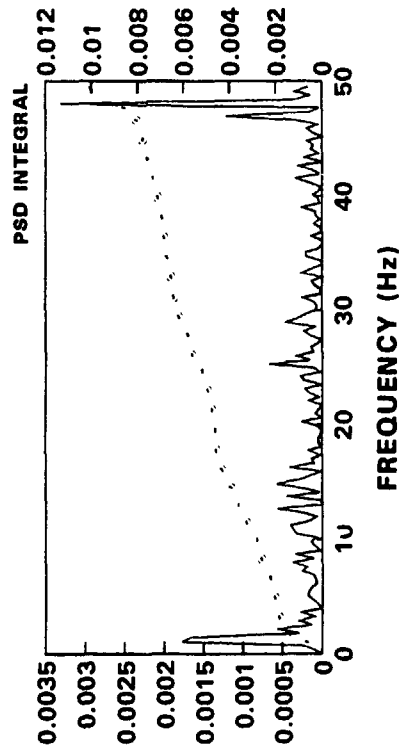
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



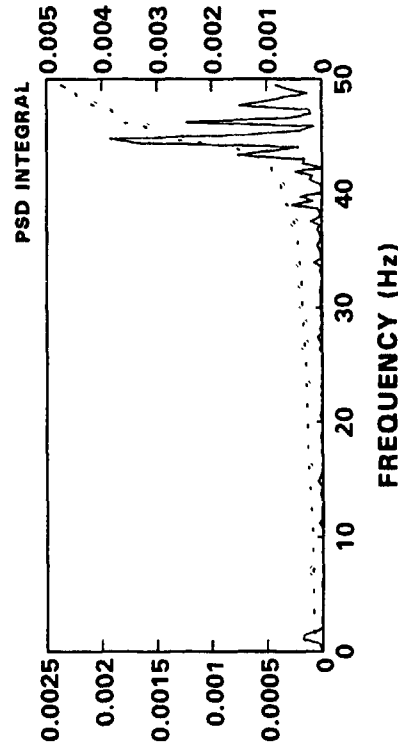
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



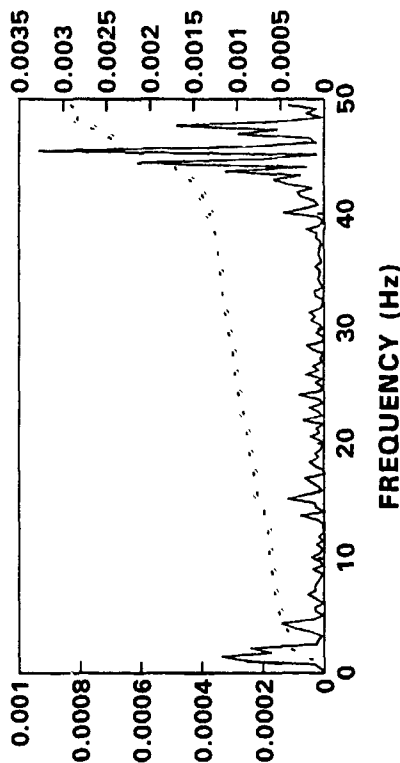
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



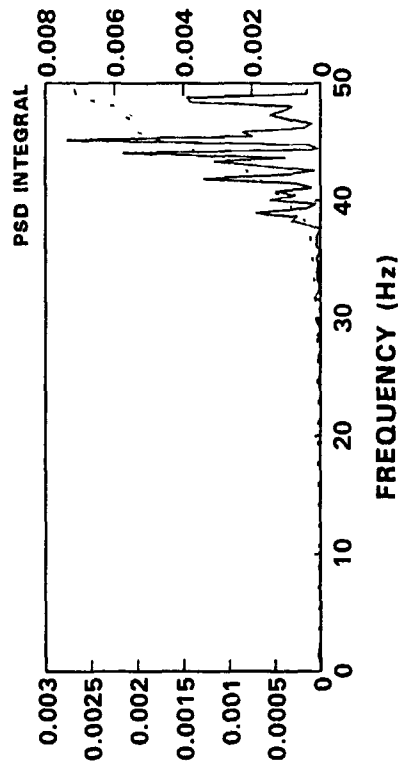
CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



CYLINDER - HT 10 - THETA 00 - AZ 000

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



CYLINDER - HT 10 - THETA 00 - AZ 000

DATA REPORT

SHAPE:	CYLINDER
DECLINATION [THETA (degrees)]:	0
DIMENSIONS [LxWxH (in)]:	8.1 x 8.1 x 8.0
WEIGHT (gm):	1029.5
TORSION FREQUENCY (Hz):	50
LATERAL (SIDE BEND) FREQUENCY (Hz):	70
NORMAL (AFT BEND) FREQUENCY (Hz):	66
AZIMUTHS (degrees):	0, 45, 90

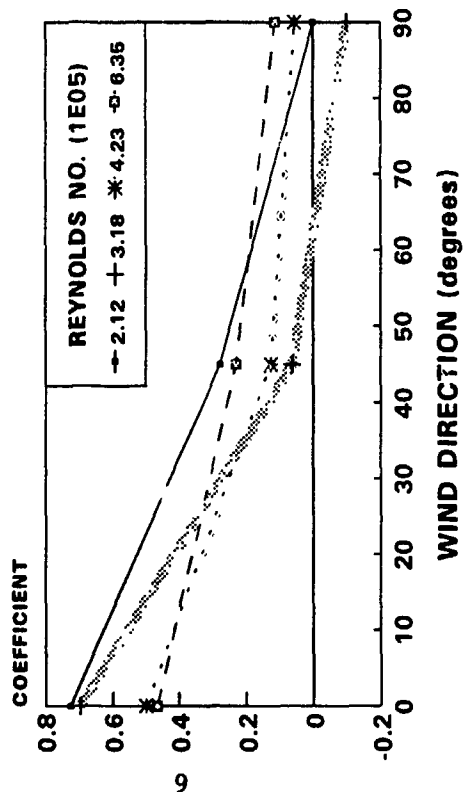
GRAPH CORRECTIONS:

- The mean value of the **ROLL** moment coefficients should be divided by 12.
- The PSD and PSD Integral values of the **ROLL** moment coefficients should be divided by 144.

OBSERVATIONS:

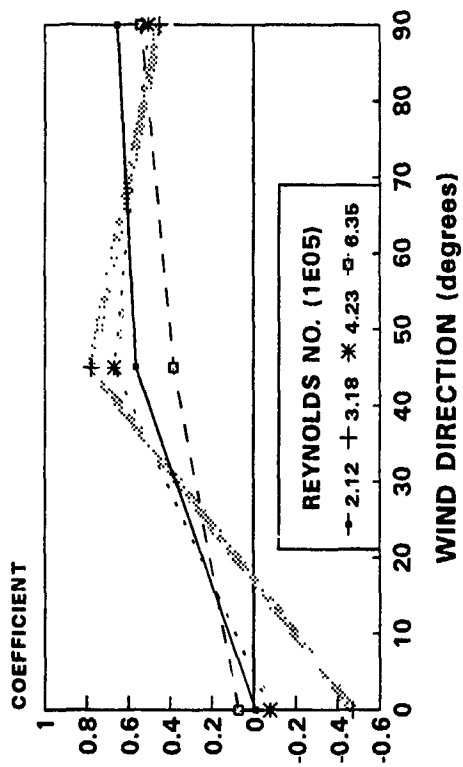
- Shedding signature not observed
- 15.176 Hz spike observed in the data.

MEAN FORCE COEFFICIENT NORMAL DIRECTION



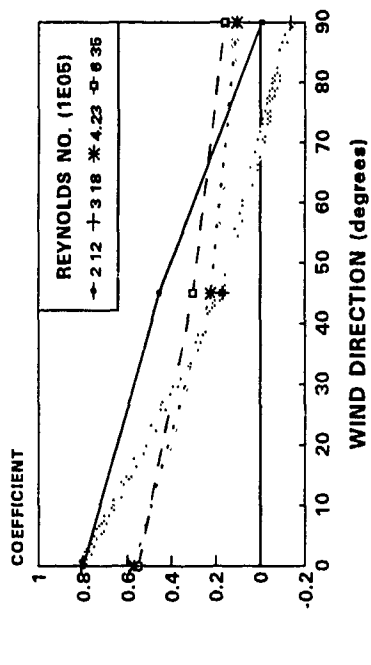
CYLINDER - HEIGHT 8 - THETA 00

MEAN FORCE COEFFICIENT LATERAL DIRECTION

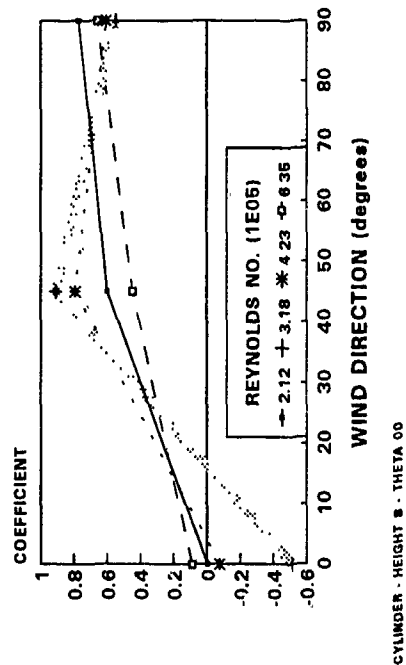


CYLINDER - HEIGHT 8 - THETA 00

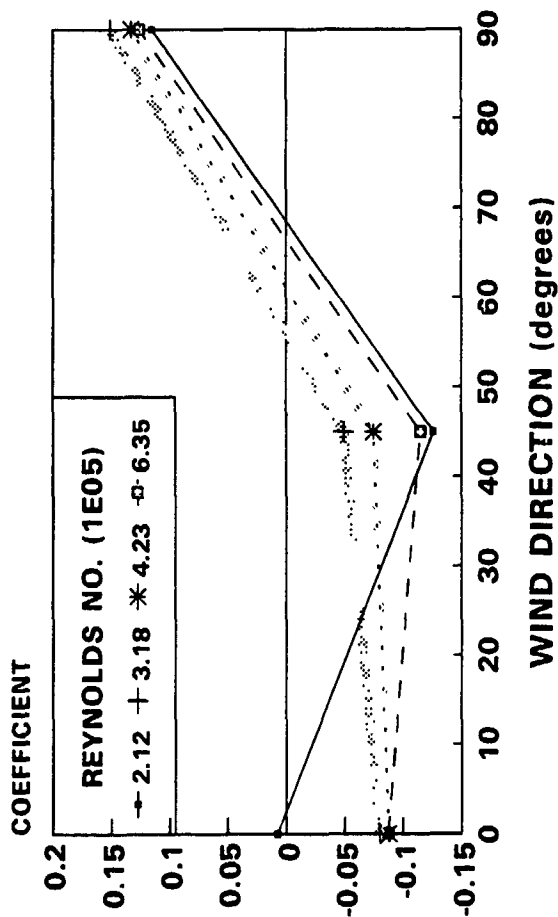
MEAN MOMENT COEFFICIENT NORMAL DIRECTION



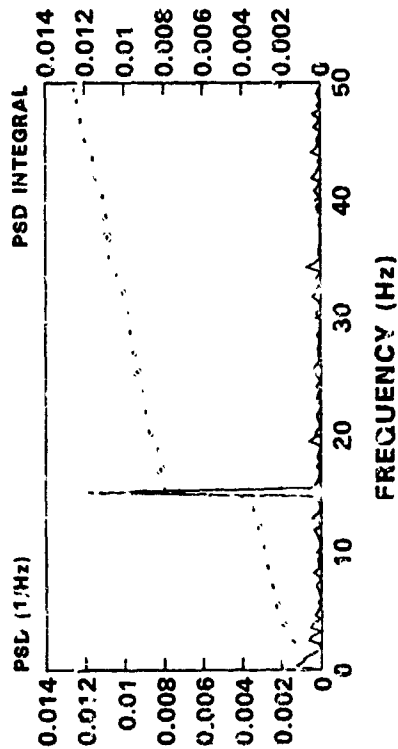
MEAN MOMENT COEFFICIENT LATERAL DIRECTION



MEAN MOMENT COEFFICIENT ROLL DIRECTION



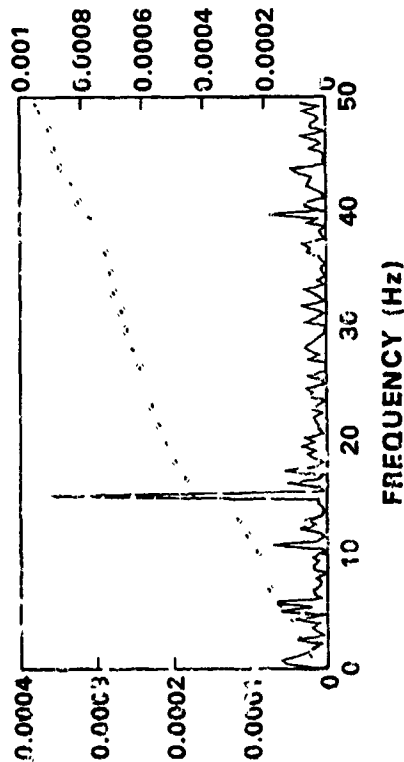
FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



--- PSD - - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 000

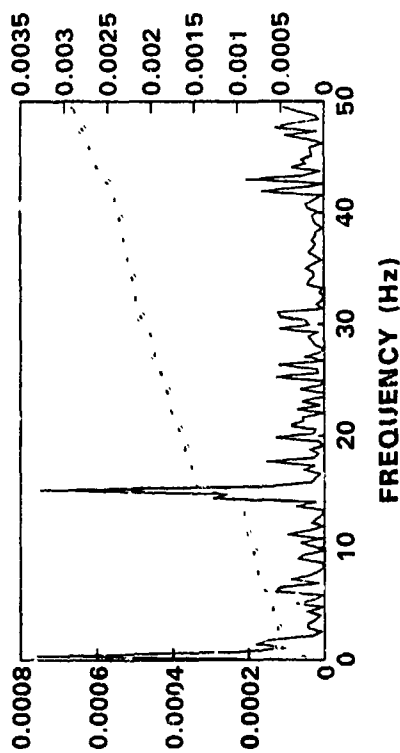
FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



--- PSD - - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 000

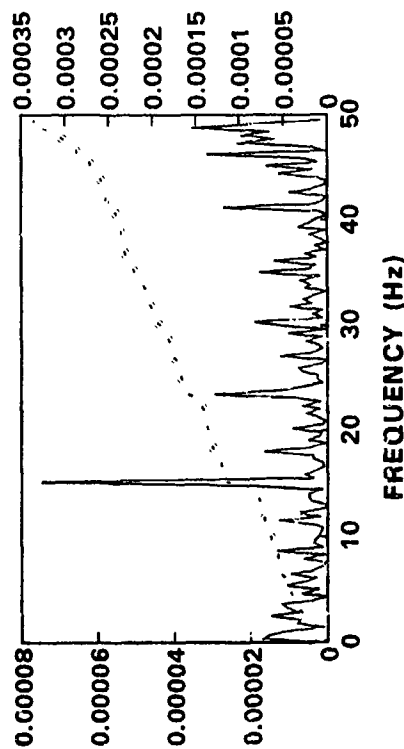
FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



--- PSD - - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 000

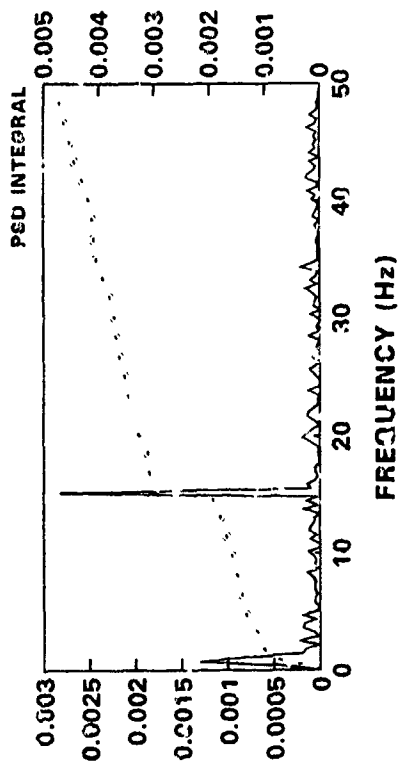
FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



--- PSD - - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 000

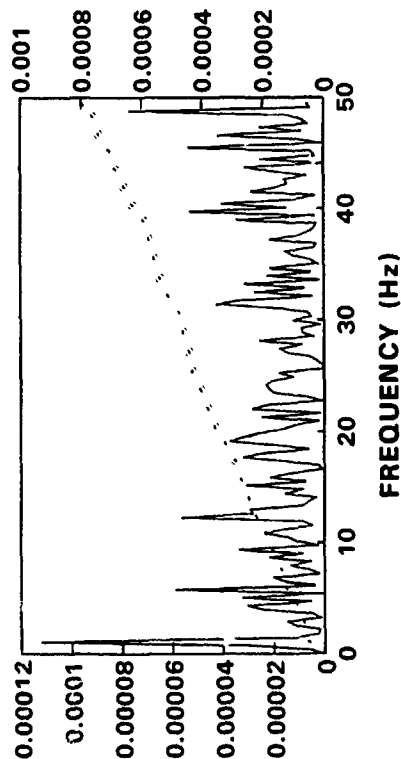
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 000

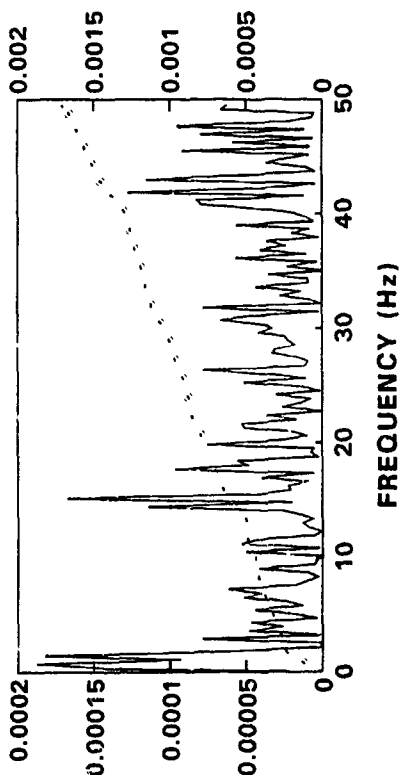
12

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



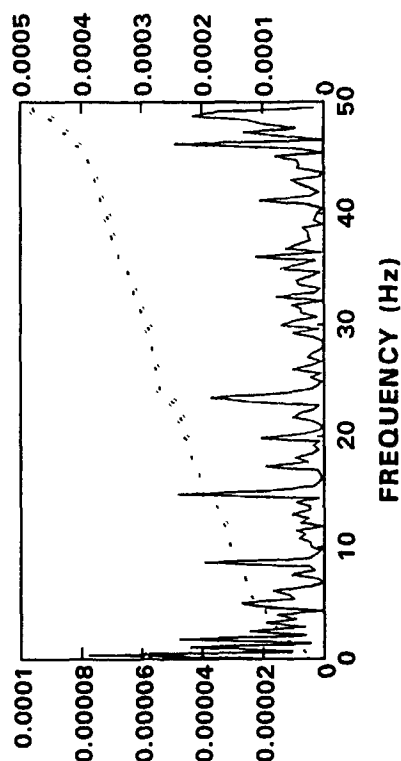
CYLINDER - HT 8 - THETA 00 - AZ - 000

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



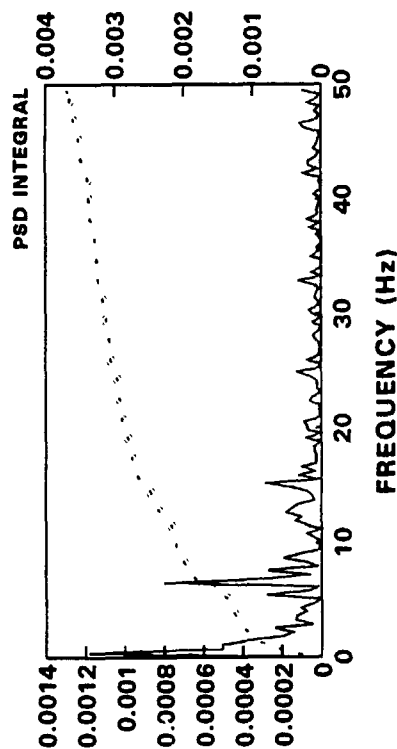
CYLINDER - HT 8 - THETA 00 - AZ - 000

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



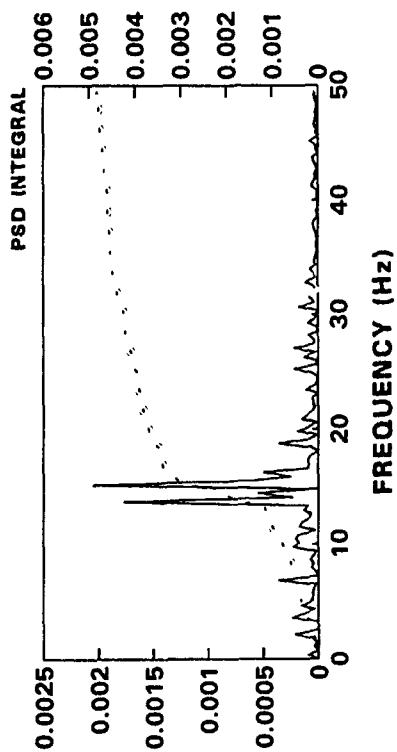
CYLINDER - HT 8 - THETA 00 - AZ - 000

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



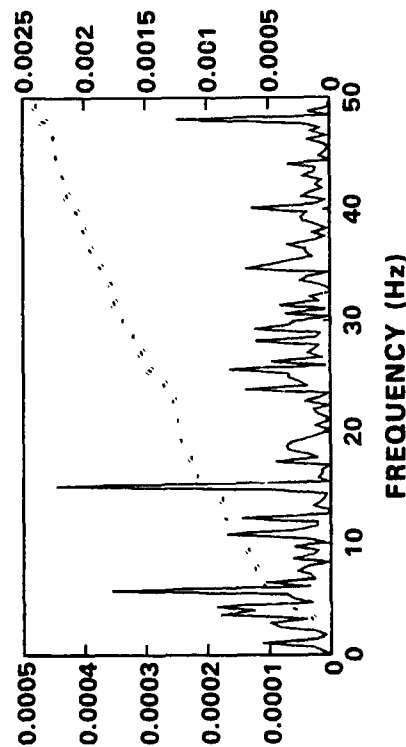
CYLINDER - HT 8 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



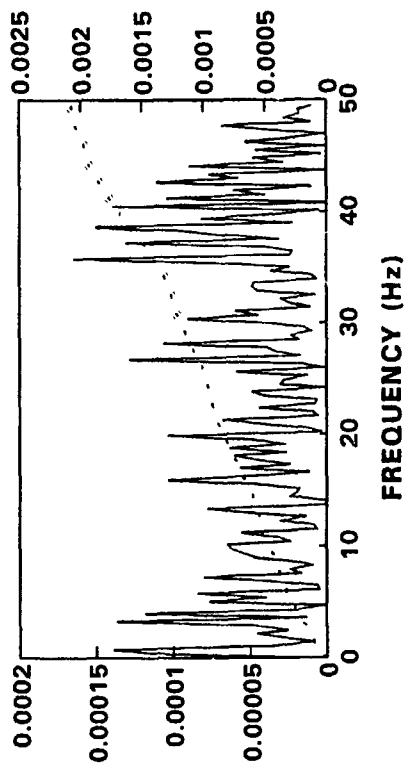
CYLINDER - HT 8 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



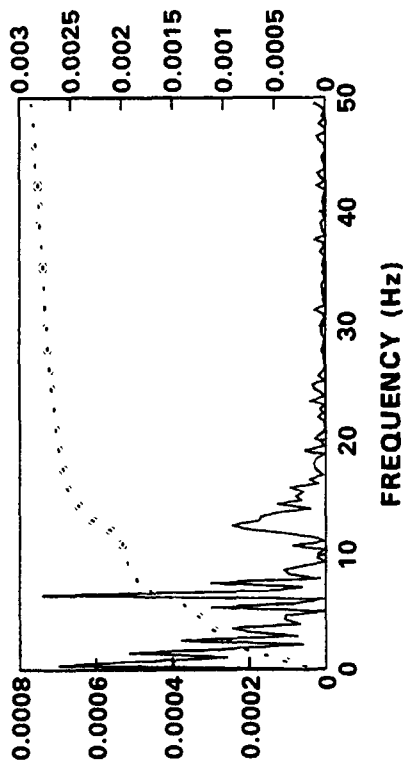
CYLINDER - HT 8 - THETA 00 - AZ 000

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ 000

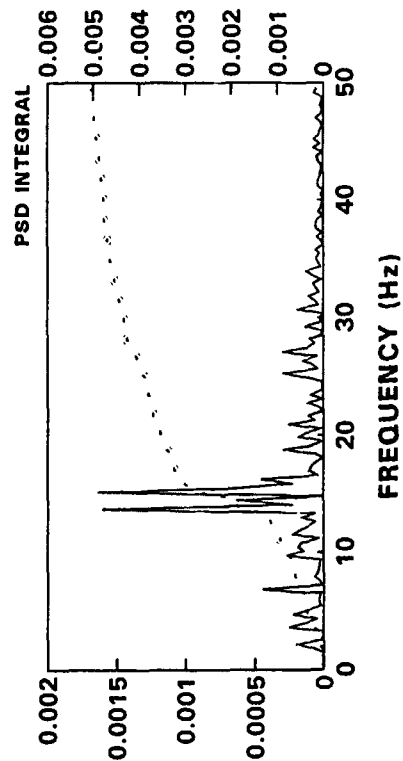
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 000

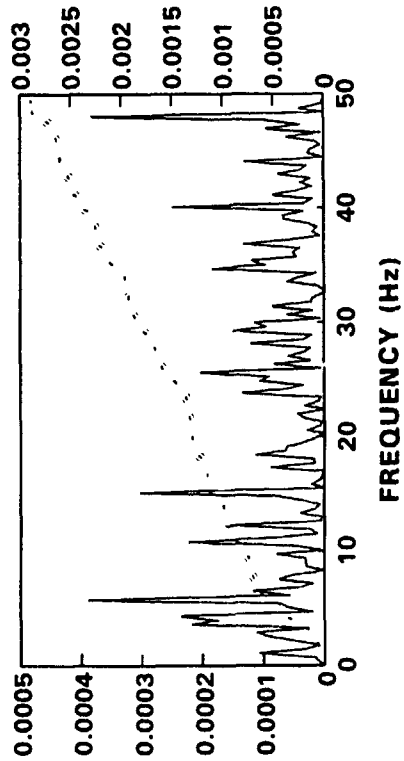
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 000

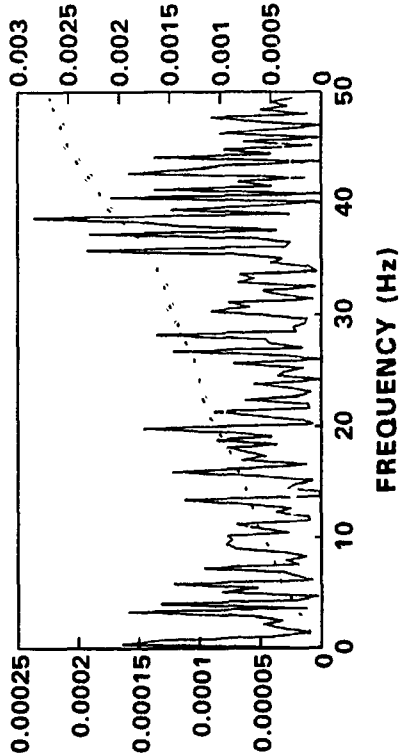
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 000

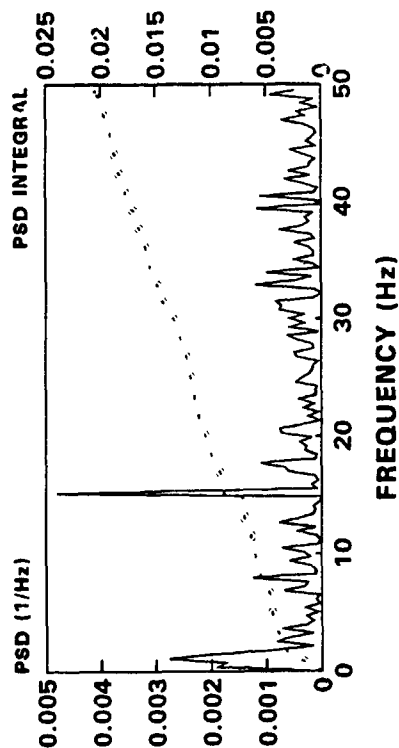
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 000

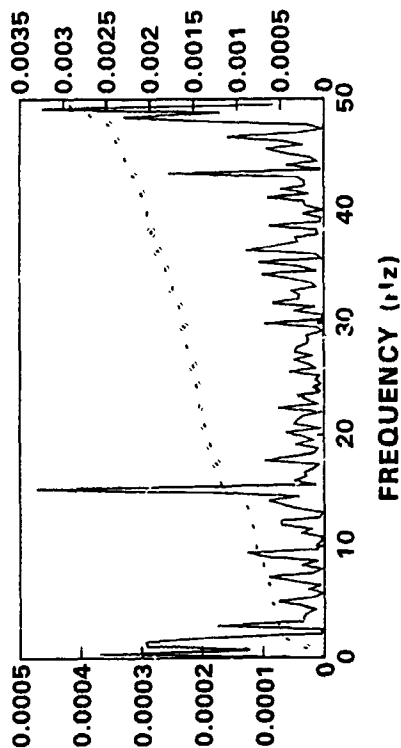
MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 000

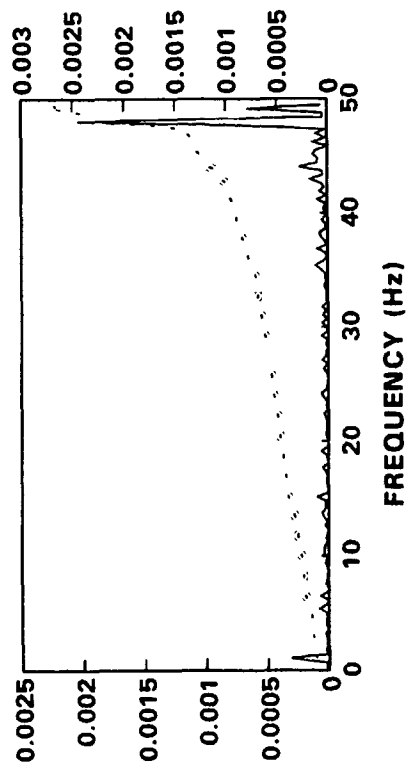
15

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



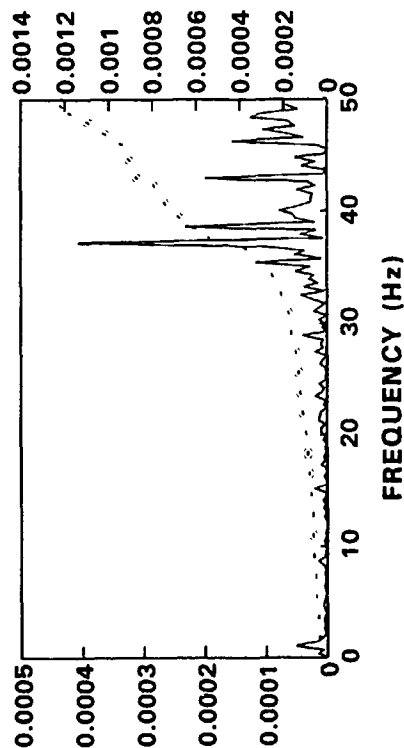
CYLINDER - HT 8 - THETA 00 - AZ - 000

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



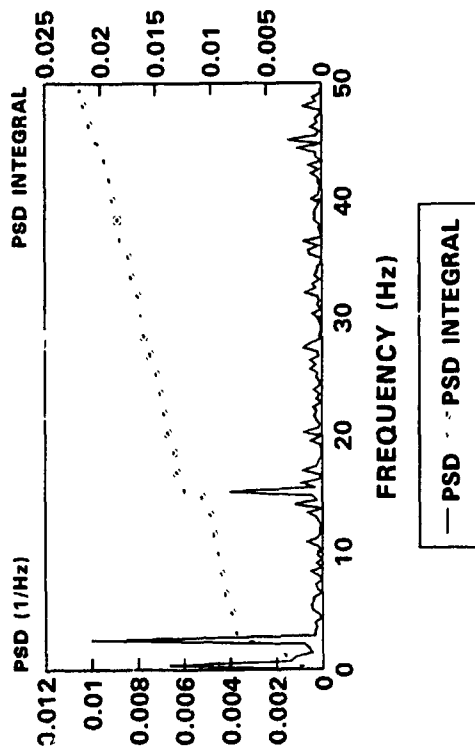
CYLINDER - HT 8 - THETA 00 - AZ - 000

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



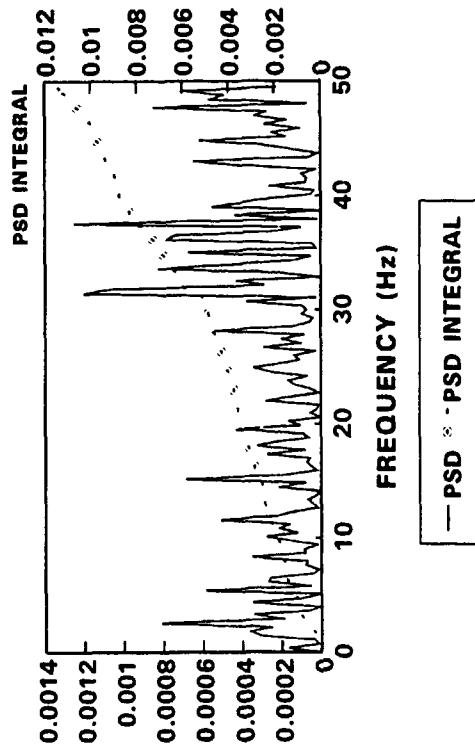
CYLINDER - HT 8 - THETA 00 - AZ - 000

FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



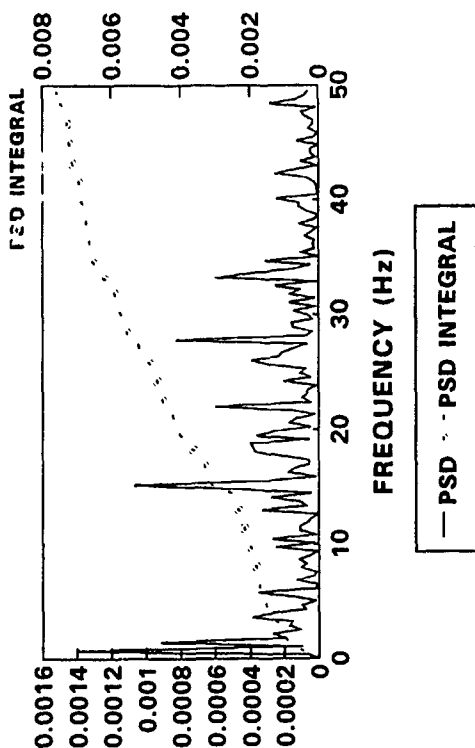
CYLINDER - HT 8 - THETA 00 - AZ - 045

FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



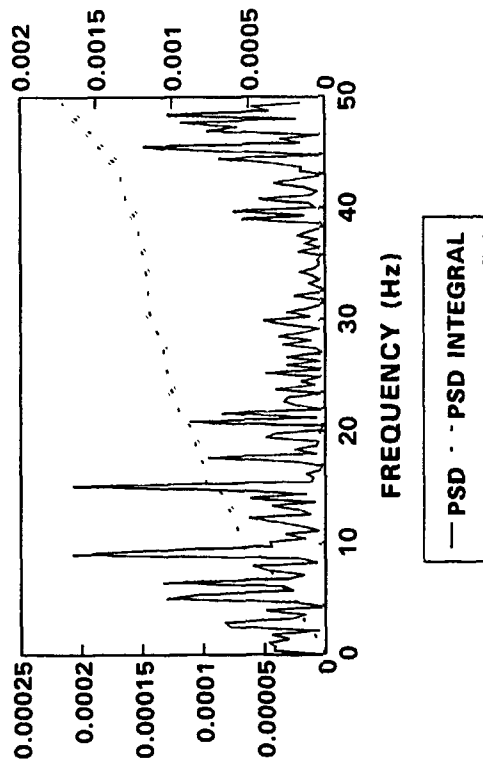
CYLINDER - HT 8 - THETA 00 - AZ - 045

FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



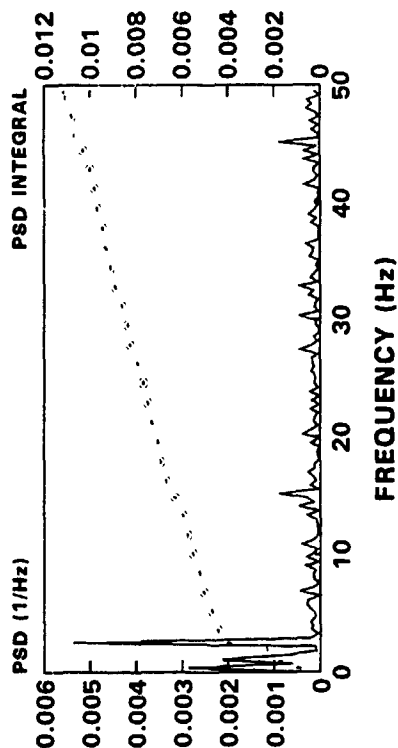
CYLINDER - HT 8 - THETA 00 - AZ - 045

FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 045

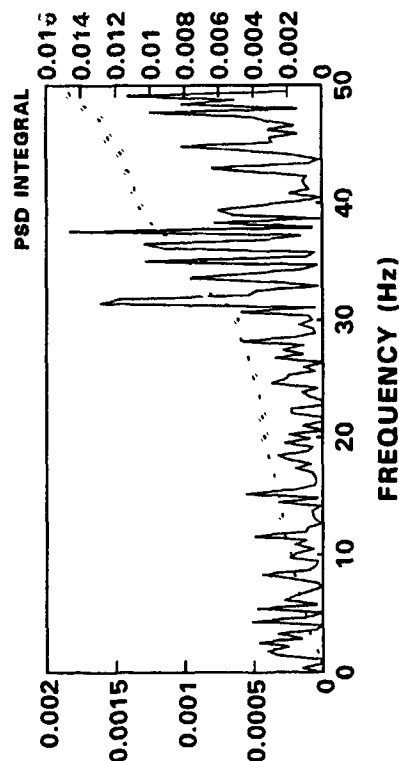
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 045

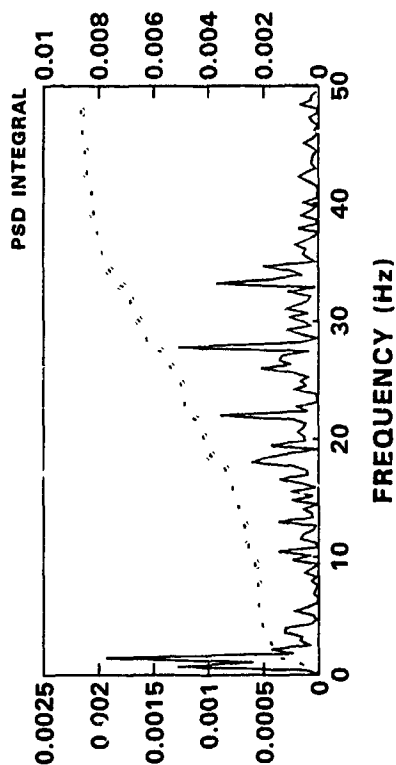
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 045

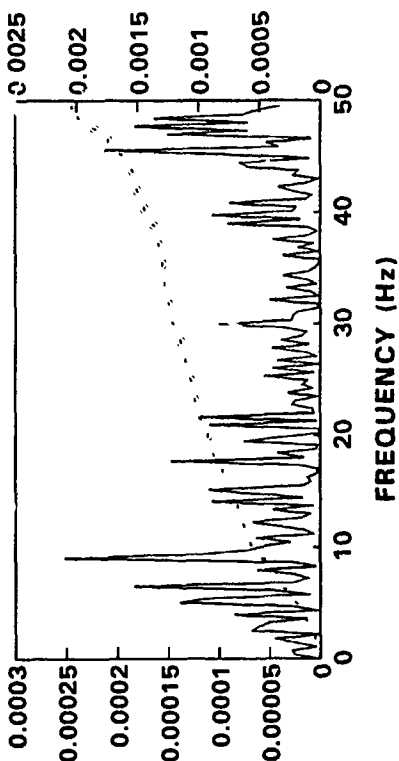
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 045

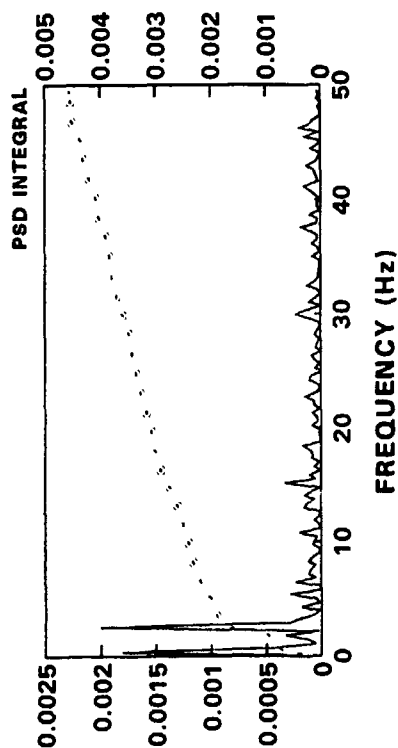
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

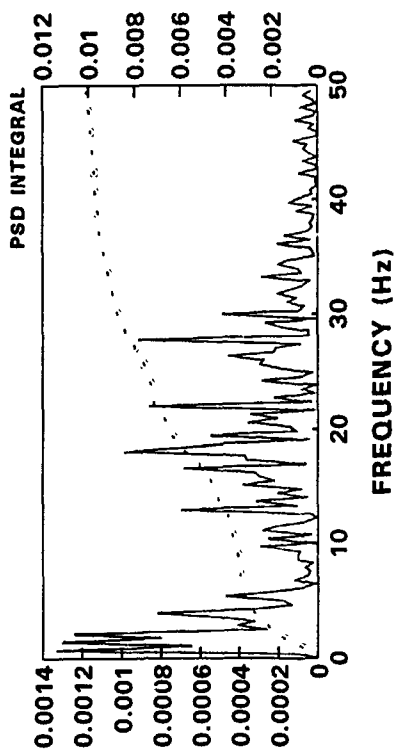
CYLINDER - HT 8 - THETA 00 - AZ - 045

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



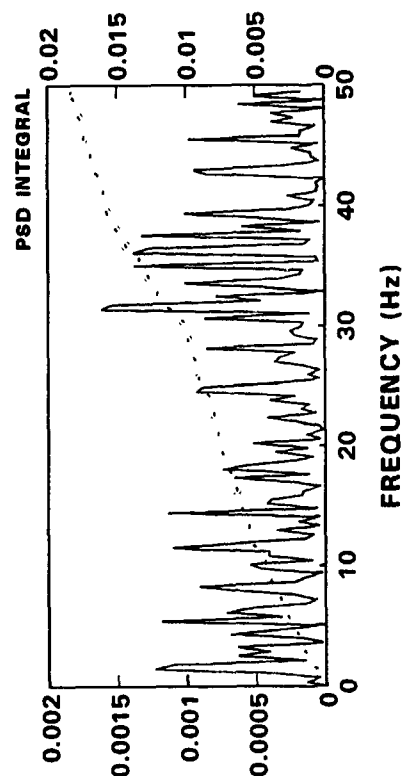
CYLINDER - HT 8 - THETA 00 - AZ 045

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



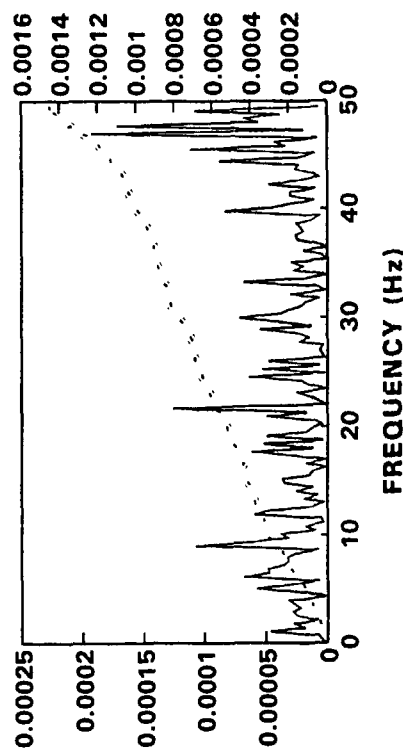
CYLINDER - HT 8 - THETA 00 - AZ 045

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



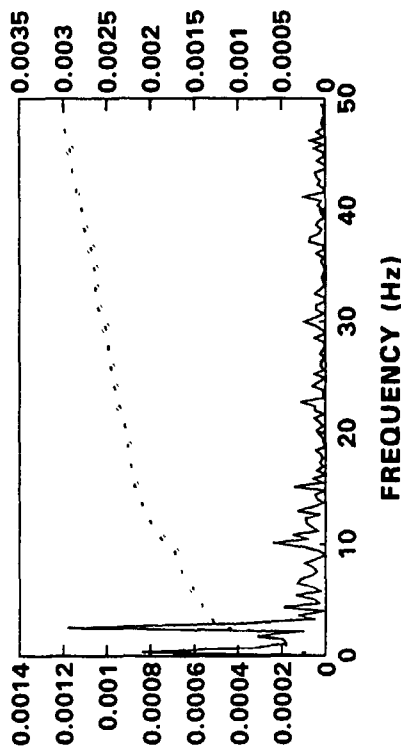
CYLINDER - HT 8 - THETA 00 - AZ 045

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ 045

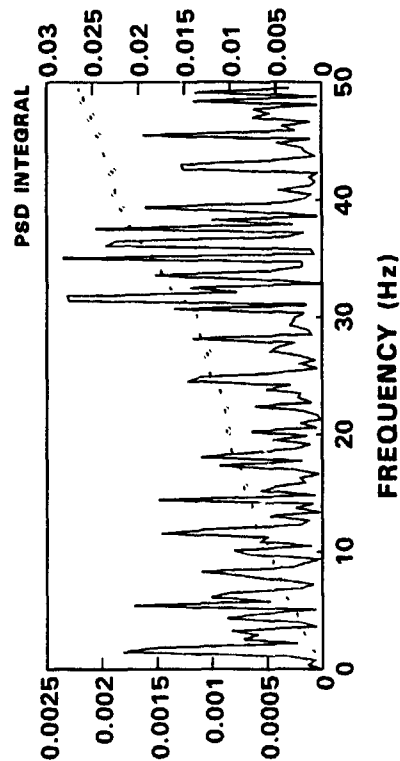
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 045

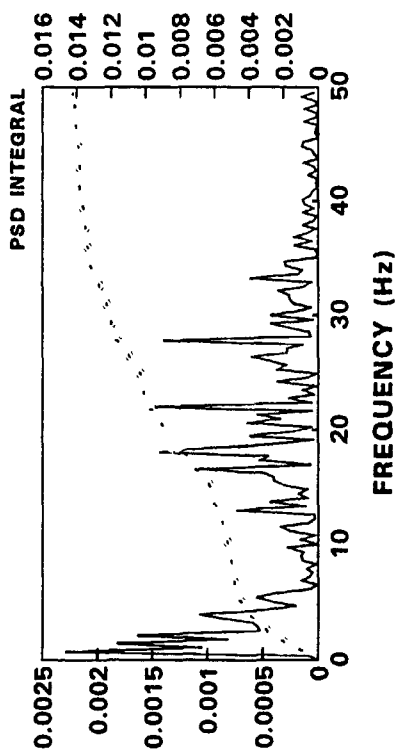
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 045

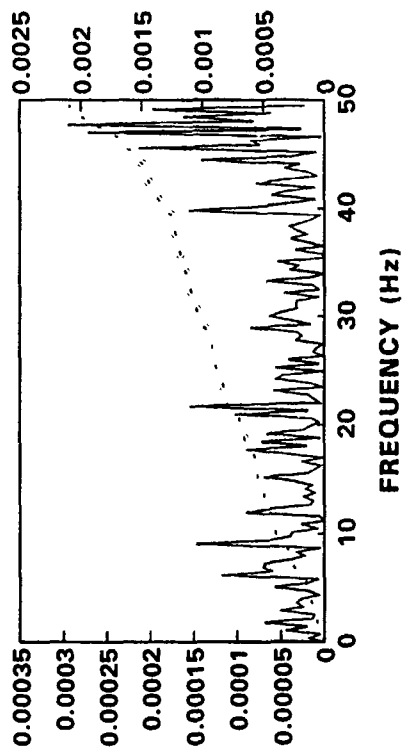
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 045

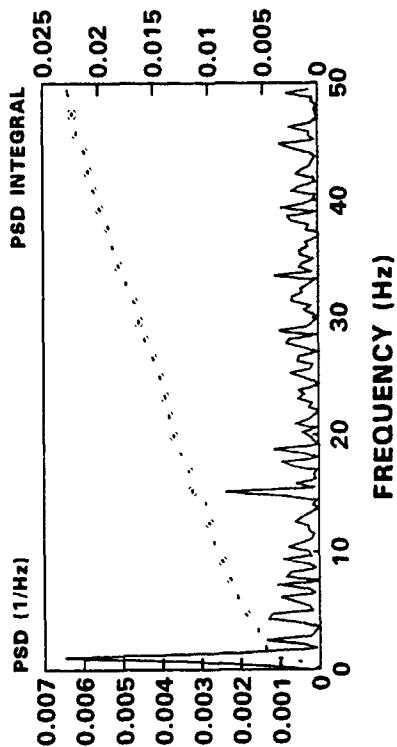
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

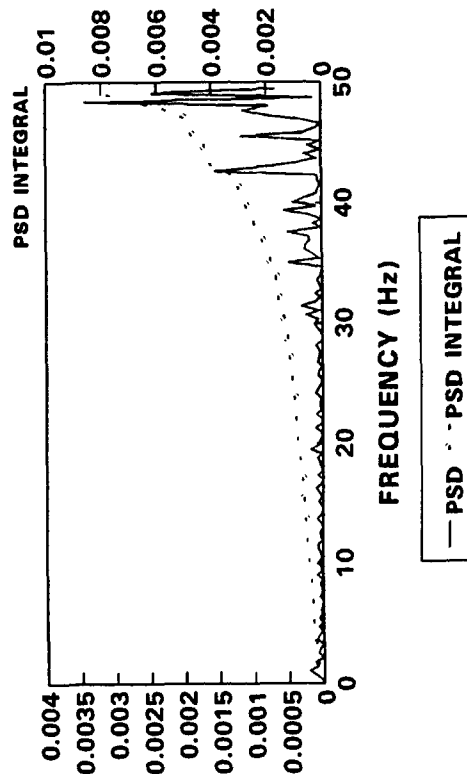
CYLINDER - HT 8 - THETA 00 - AZ 045

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



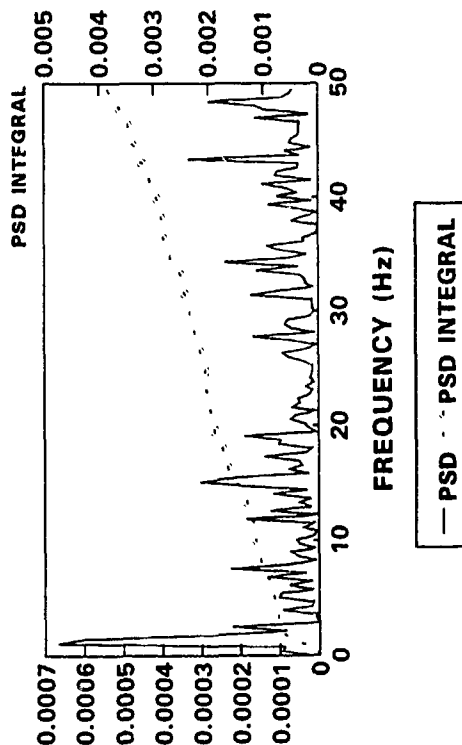
CYLINDER - HT 8 - THETA 00 - AZ - 045

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



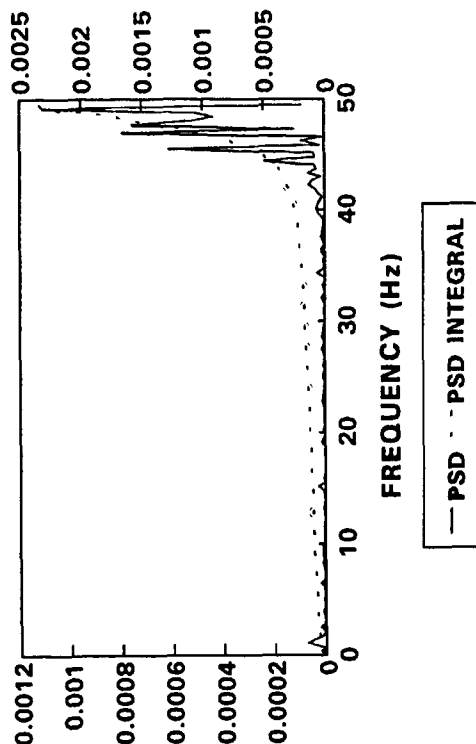
CYLINDER - HT 8 - THETA 00 - AZ - 045

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



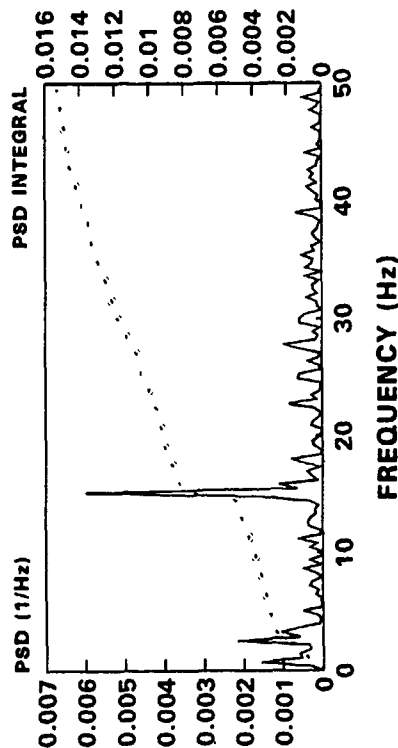
CYLINDER - HT 8 - THETA 00 - AZ - 045

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 045

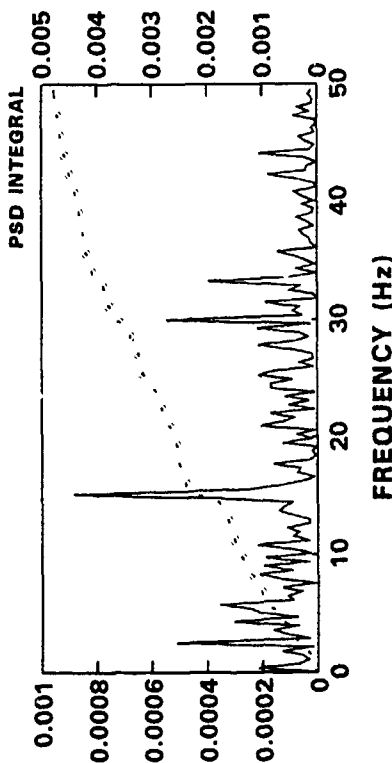
FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 090

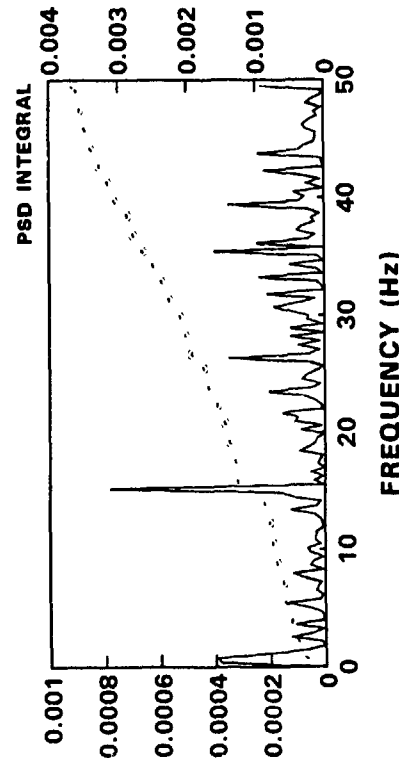
FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 090

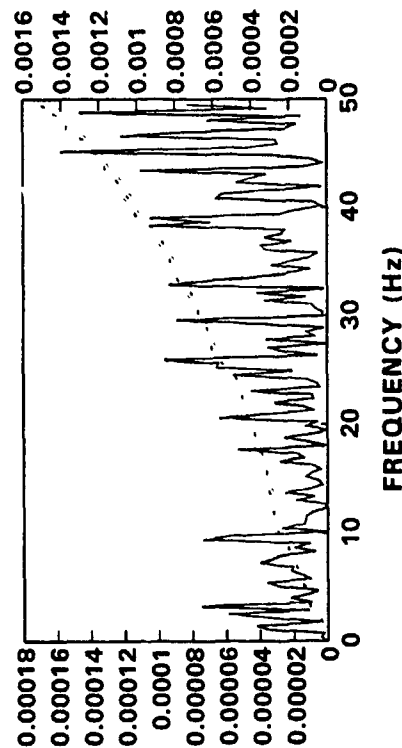
FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ - 090

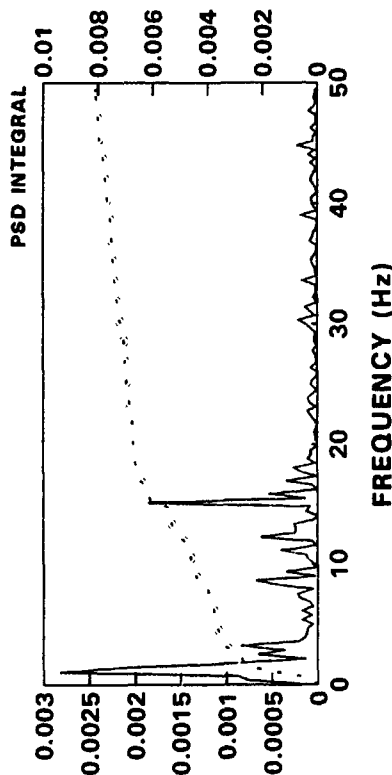
FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

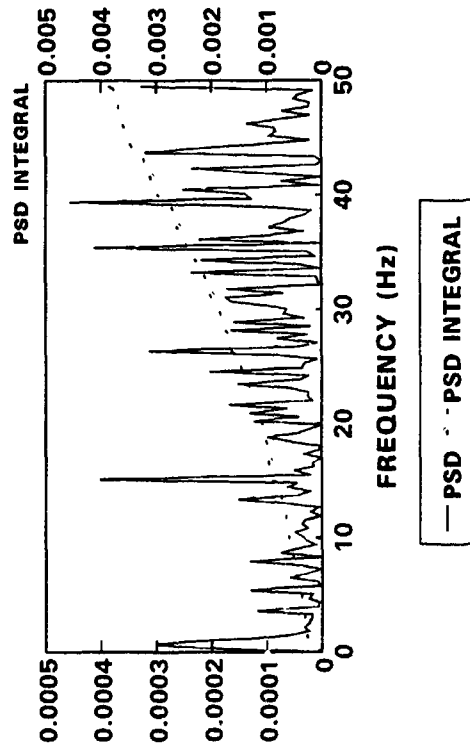
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



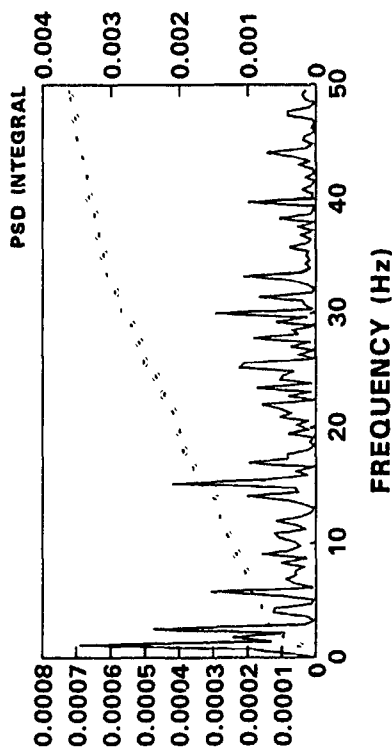
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



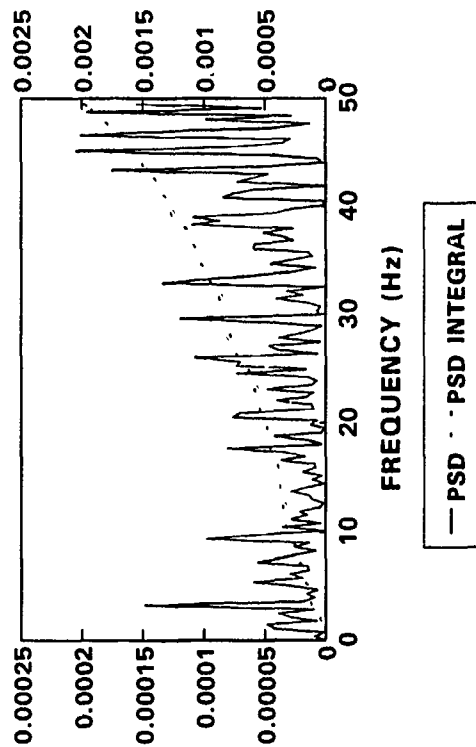
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



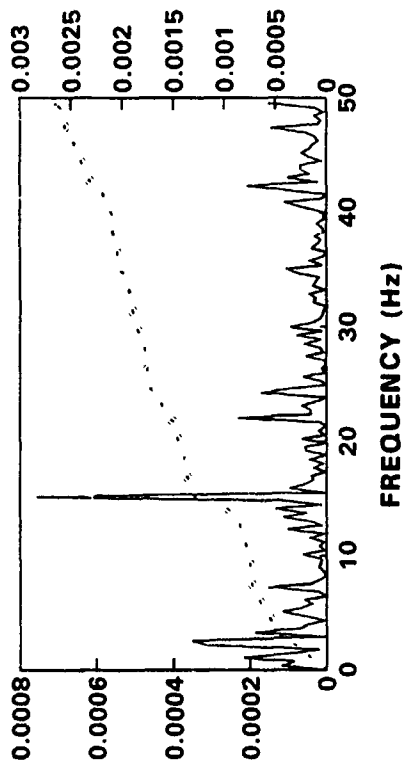
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 090

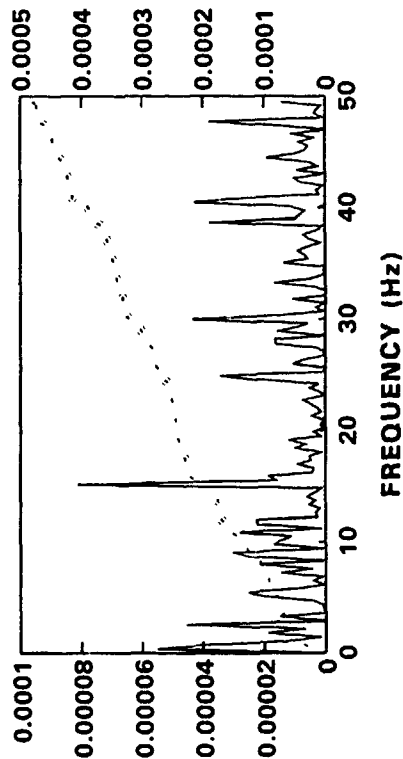
FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 090

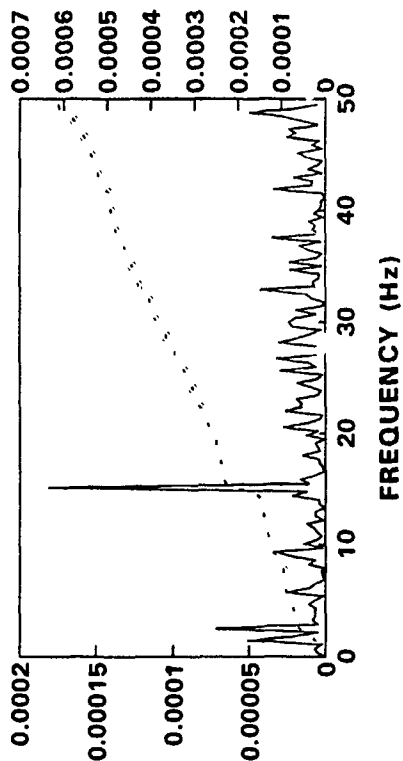
FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 090

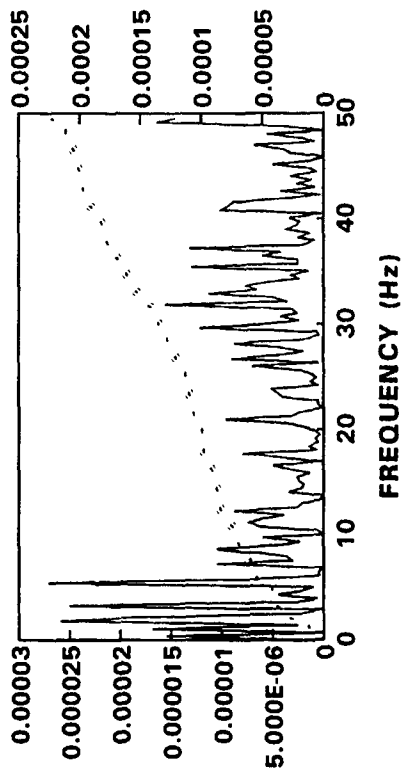
FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - PSD INTEGRAL

CYLINDER - HT 8 - THETA 00 - AZ 090

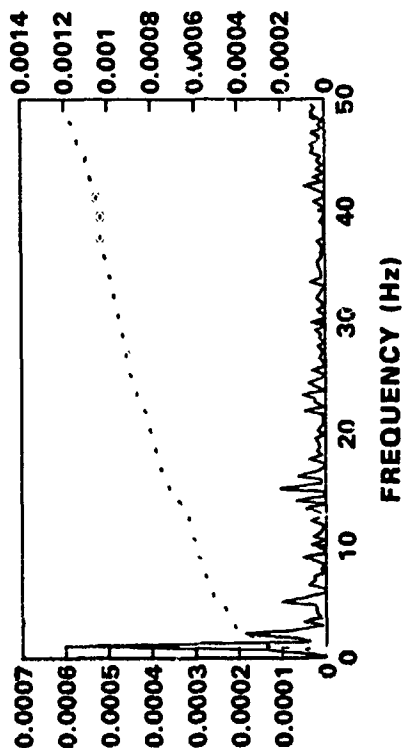
FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - PSD INTEGRAL

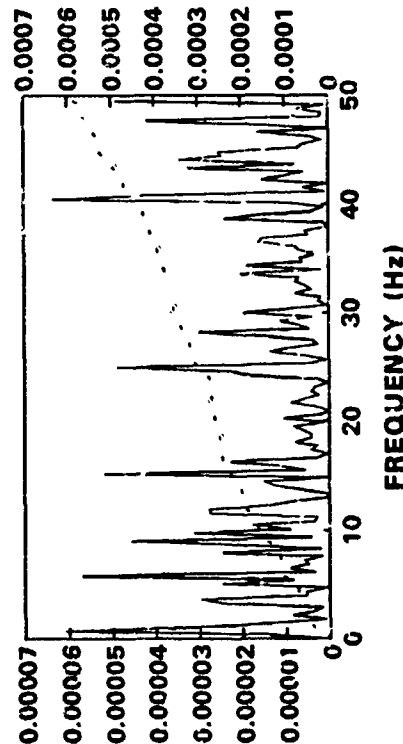
CYLINDER - HT 8 - THETA 00 - AZ 090

MOMENT COEFF - LATERAL **50 FT/SEC NOMINAL**



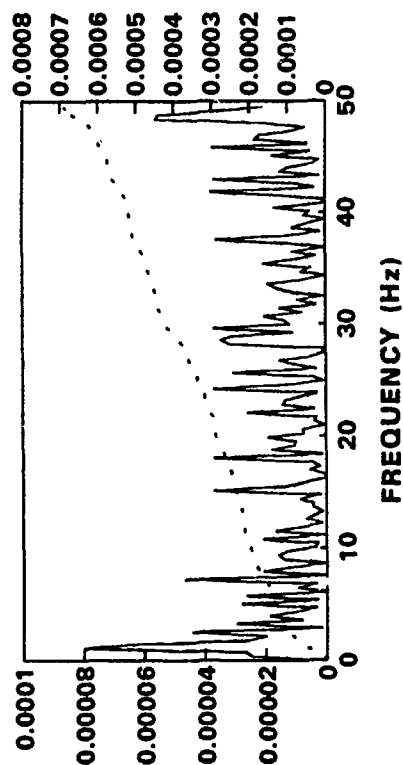
CYLINDER - HT 8 - THETA 00 - AZ 050

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



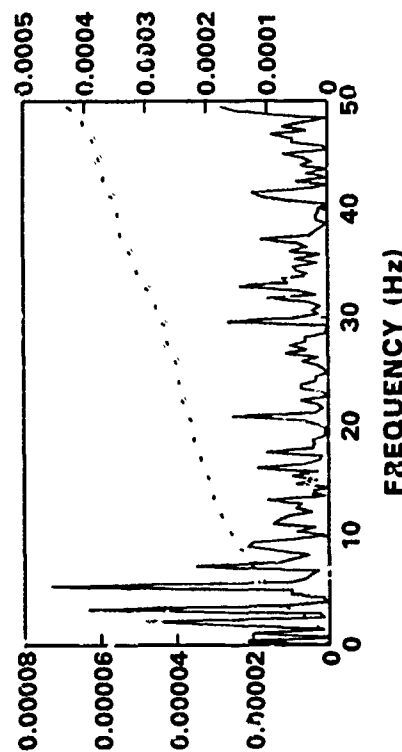
CYLINDER - HT 8 - THETA C3 - AZ 080

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



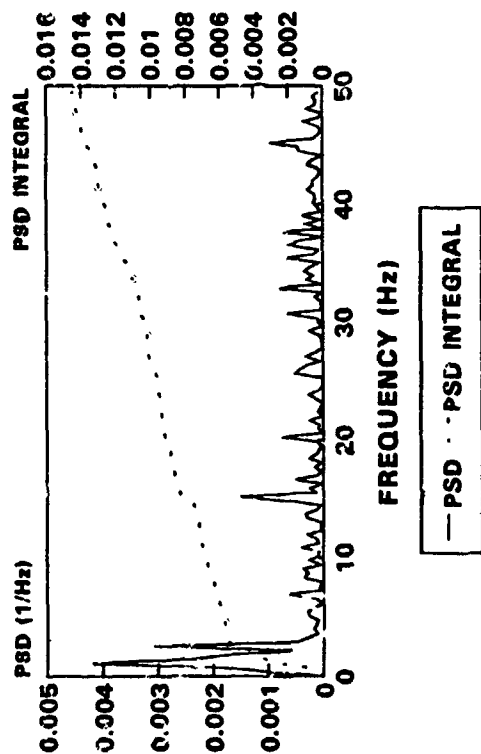
CYLINDER - HT 8 - THETA 00 - AZ 080

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



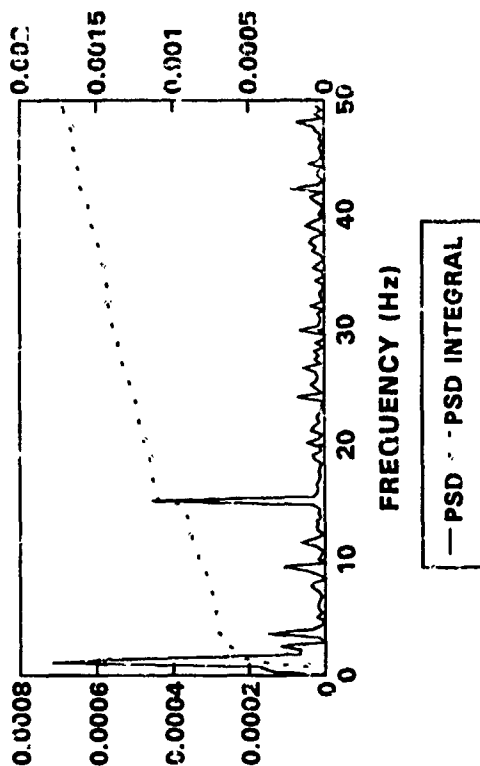
CYLINDER - HT 8 - THETA 00 - AZ 080

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



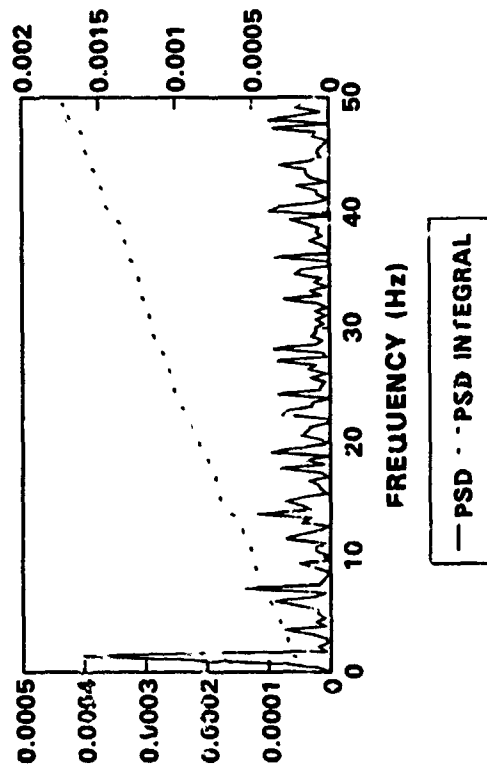
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



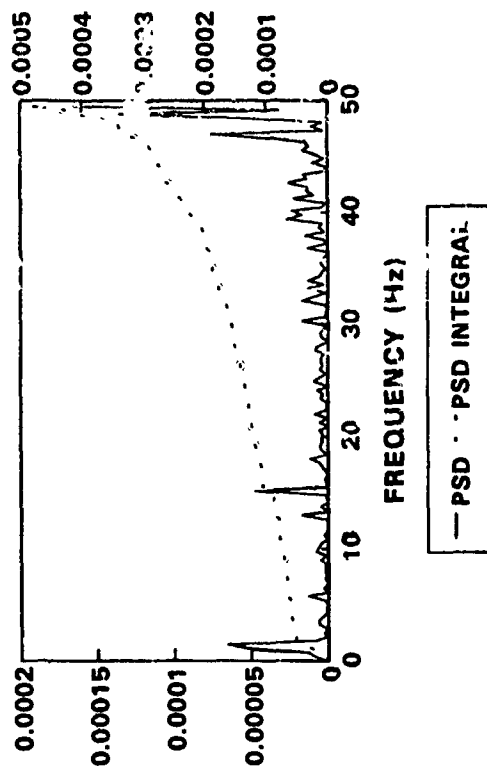
CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 090

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



CYLINDER - HT 8 - THETA 00 - AZ - 090

DATA REPORT

SHAPE:	CYLINDER
DECLINATION [THETA (degrees)]:	30
DIMENSIONS [LxWxH (in)]:	8.99 x 8.08 x 8.99
WEIGHT (gm):	898.1
TORSION FREQUENCY (Hz):	39
LATERAL (SIDE BEND) FREQUENCY (Hz):	70
NORMAL (AFT BEND) FREQUENCY (Hz):	88
AZIMUTHS (degrees):	0, 30, 45, 60, 90, 120, 135, 150, 180

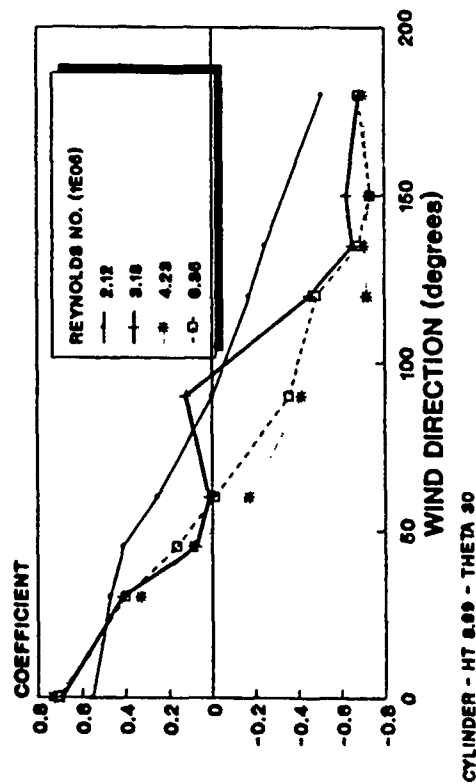
GRAPH CORRECTIONS:

- The mean value of the **ROLL** moment coefficients should be divided by 12.
- The PSD and PSD Integral values of the **ROLL** moment coefficients should be divided by 144.

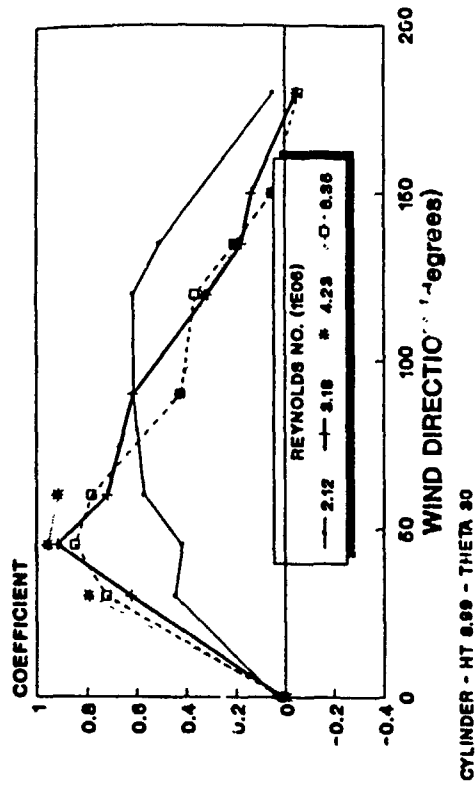
OBSERVATIONS:

- Single frequency shedding signature not observed.
- Evidence of a multifrequency shed can be seen in the lateral data and in the roll data at azimuths of 0 and 180 degrees.
- Much of the data shows numerous spectral peaks near 40 Hz. This is close to the reported torsional frequency of 39 Hz.
- 15.176 Hz spike occasionally observed in the data.

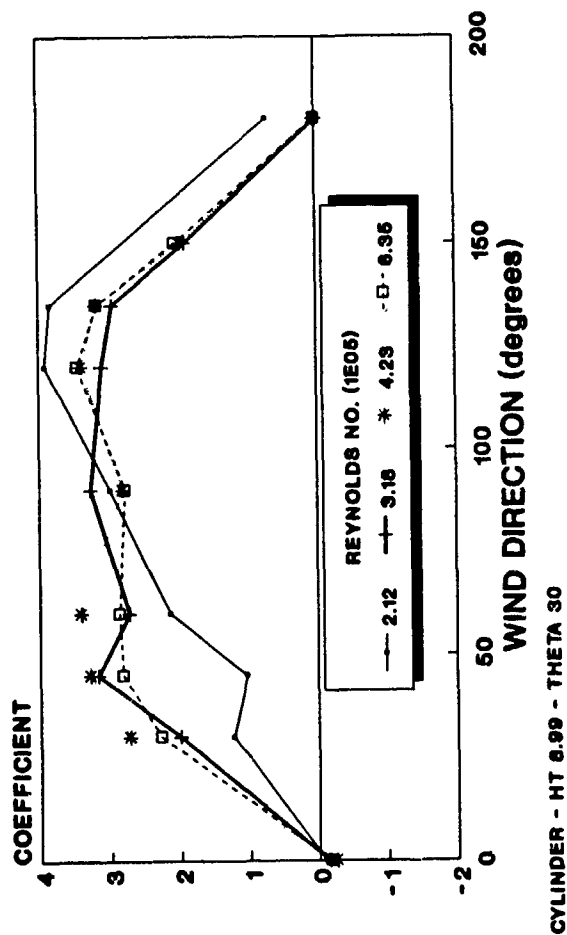
MEAN FORCE COEFFICIENT NORMAL DIRECTION



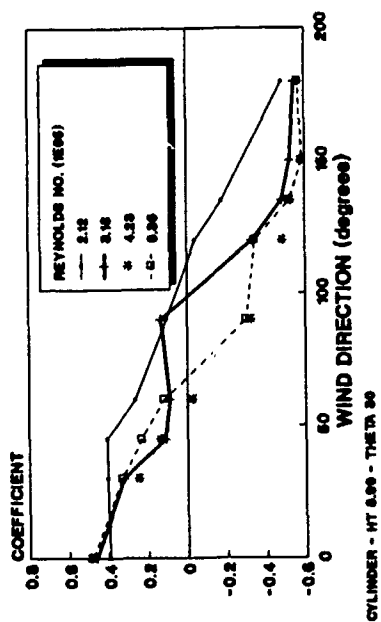
MEAN FORCE COEFFICIENT LATERAL DIRECTION



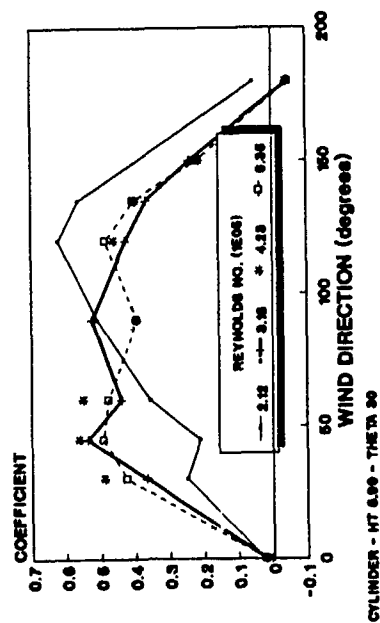
MEAN MOMENT COEFFICIENT ROLL DIRECTION



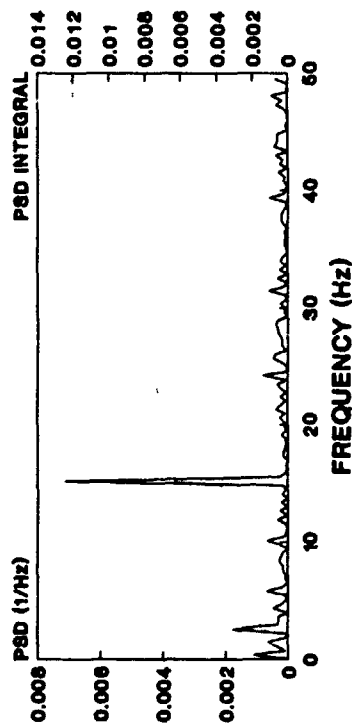
MEAN MOMENT COEFFICIENT NORMAL DIRECTION



MEAN MOMENT COEFFICIENT LATERAL DIRECTION

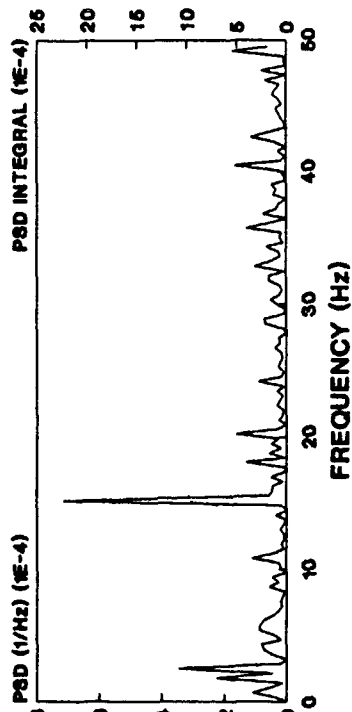


FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



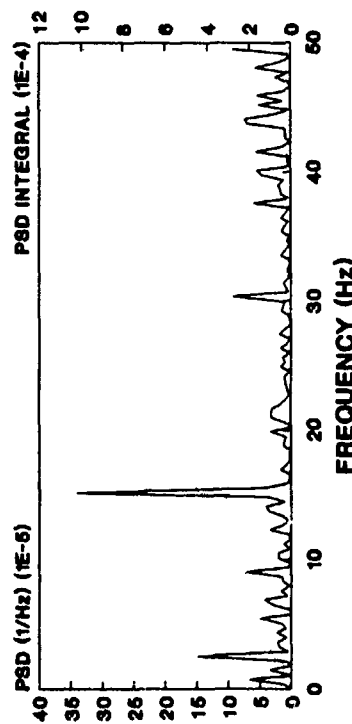
CYLINDER - HT 8.99 - THETA 30 - AZ 000

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



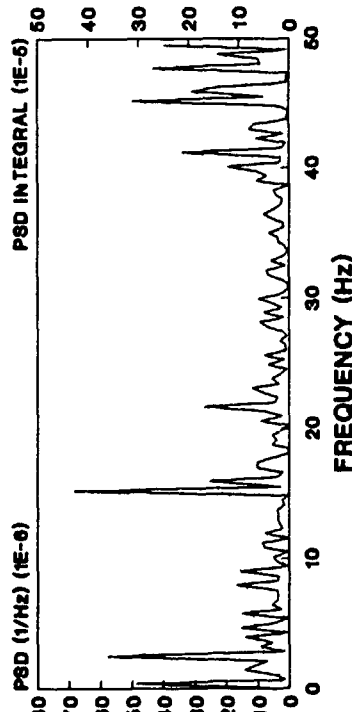
CYLINDER - HT 8.99 - THETA 30 - AZ 000

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



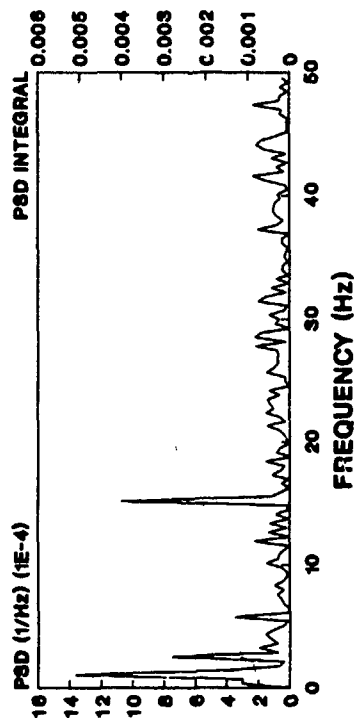
CYLINDER - HT 8.99 - THETA 30 - AZ 000

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



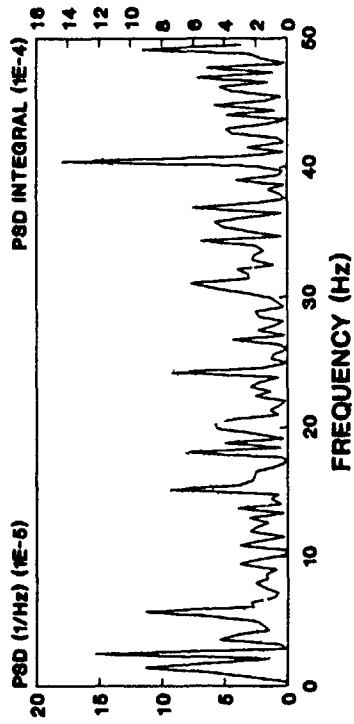
CYLINDER - HT 8.99 - THETA 30 - AZ 000

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



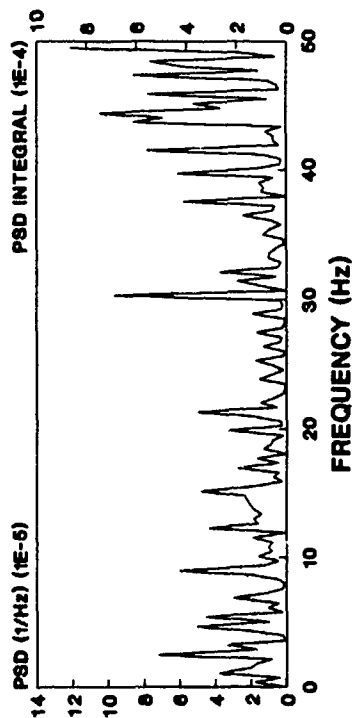
CYLINDER - HT 8.99 - THETA 30 - AZ 000

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



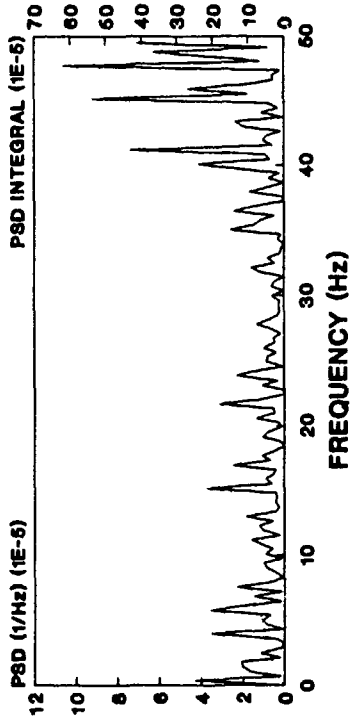
CYLINDER - HT 8.99 - THETA 30 - AZ 000

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



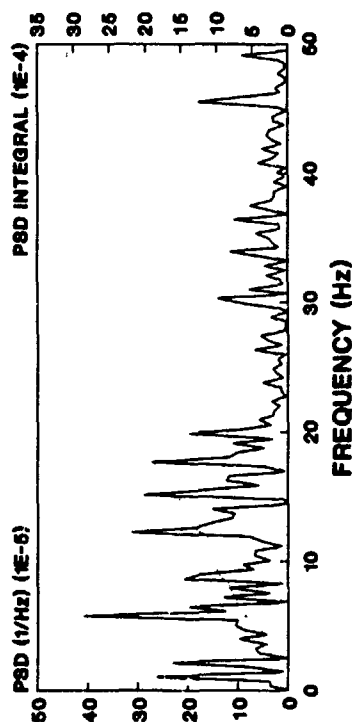
CYLINDER - HT 8.99 - THETA 30 - AZ 000

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.99 - THETA 30 - AZ 000

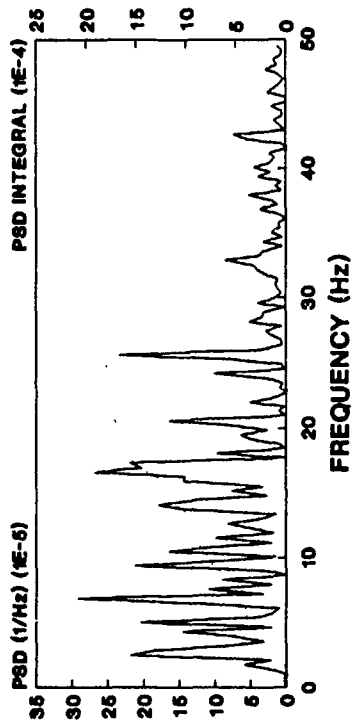
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

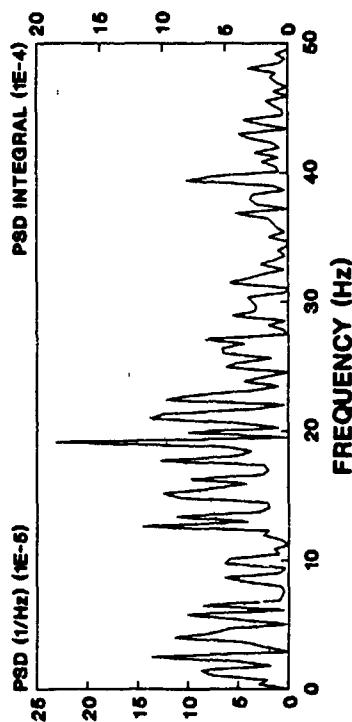
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

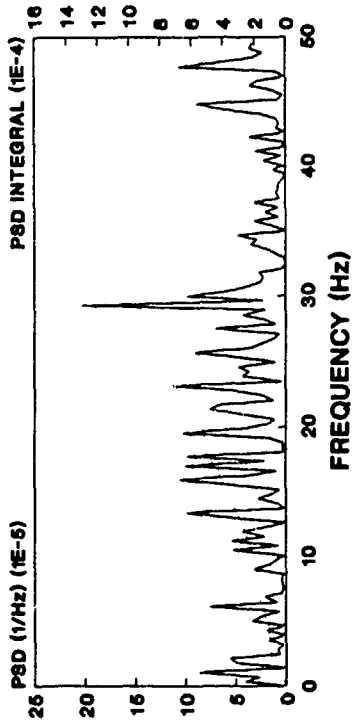
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

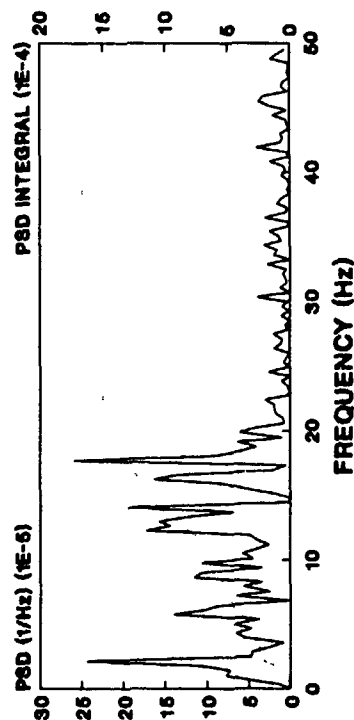
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

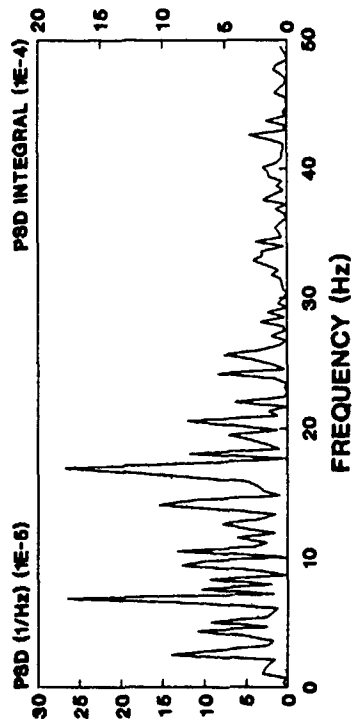
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

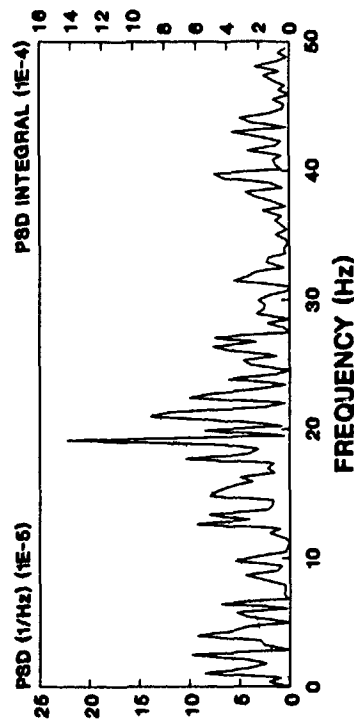
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

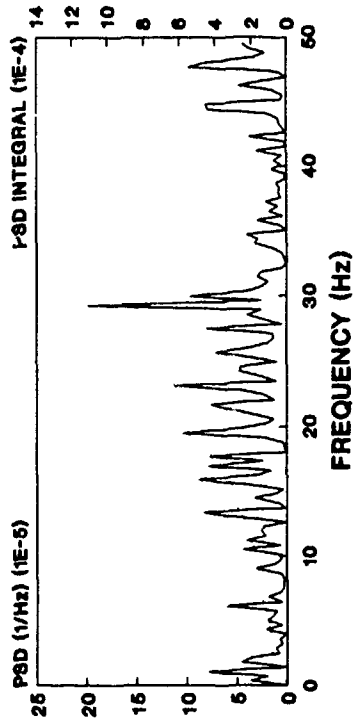
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

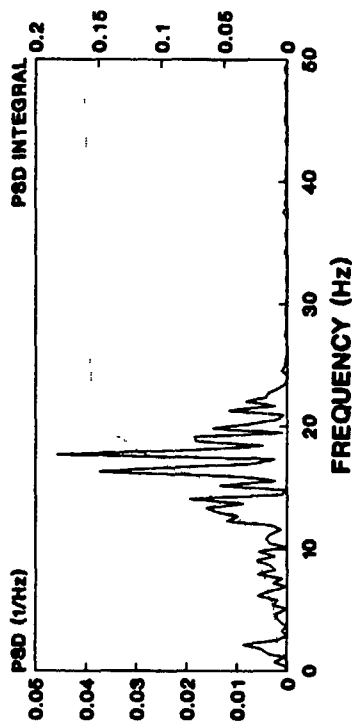
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 000

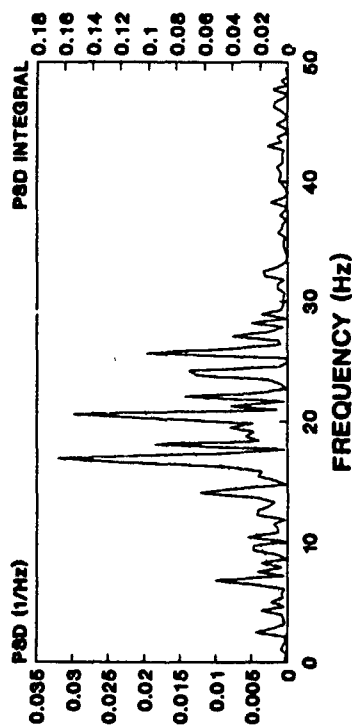
MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.88 - THETA 30 - AZ 000

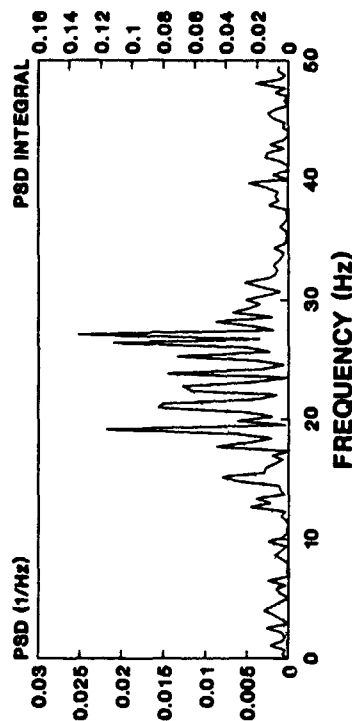
MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.88 - THETA 30 - AZ 000

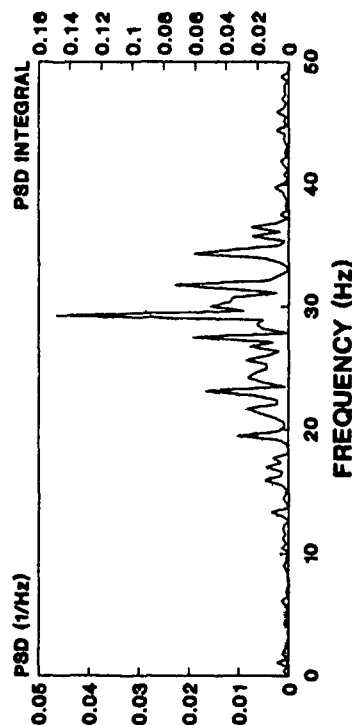
MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.88 - THETA 30 - AZ 000

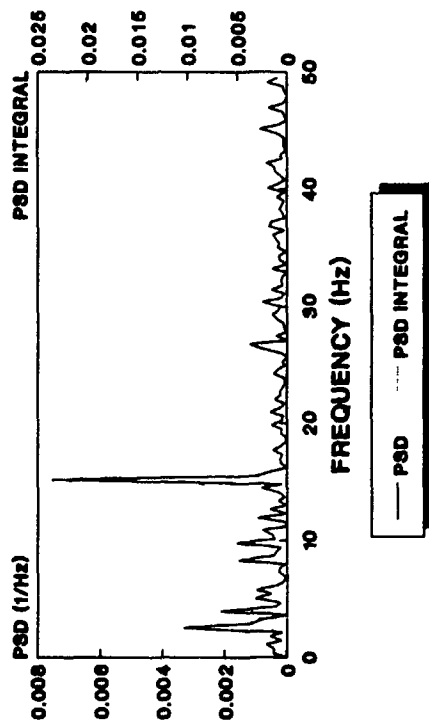
MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

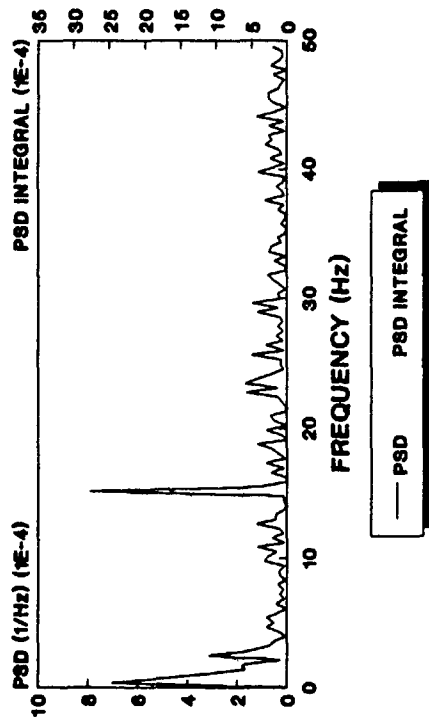
CYLINDER - HT 8.88 - THETA 30 - AZ 000

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



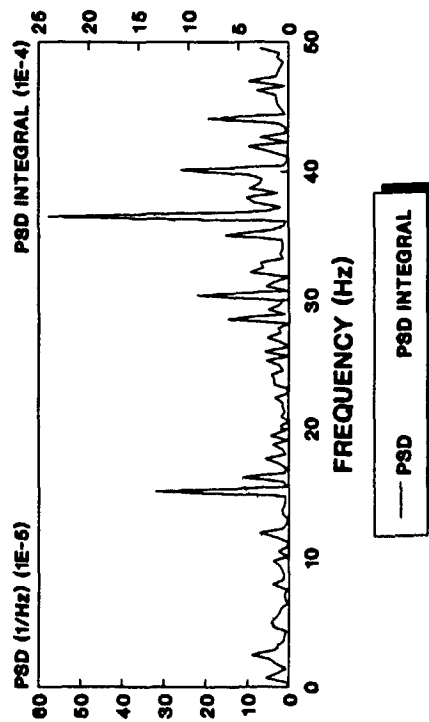
CYLINDER - HT 8.99 - THETA 30 - AZ 030

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



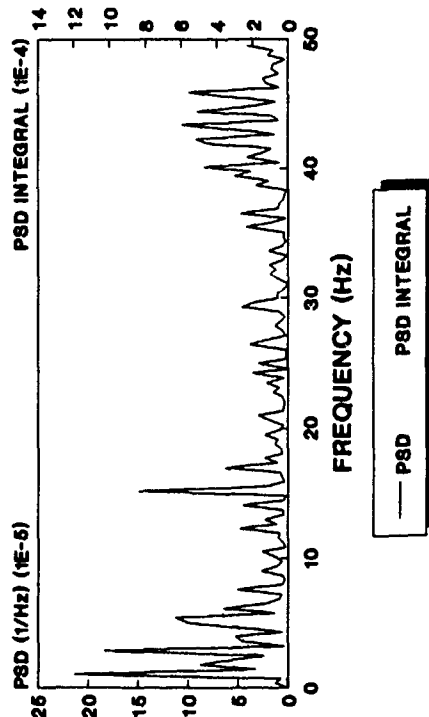
CYLINDER - HT 8.99 - THETA 30 - AZ 030

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



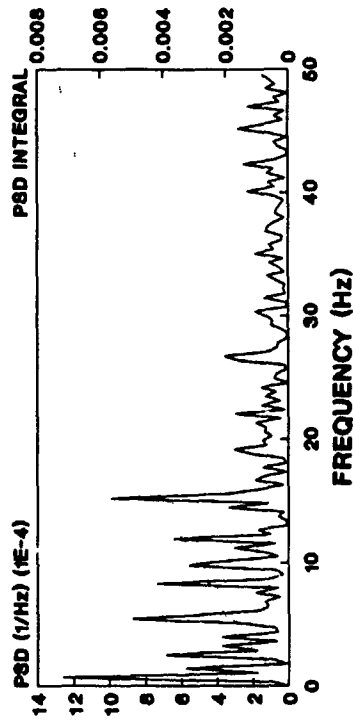
CYLINDER - HT 8.99 - THETA 30 - AZ 030

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 30 - AZ 030

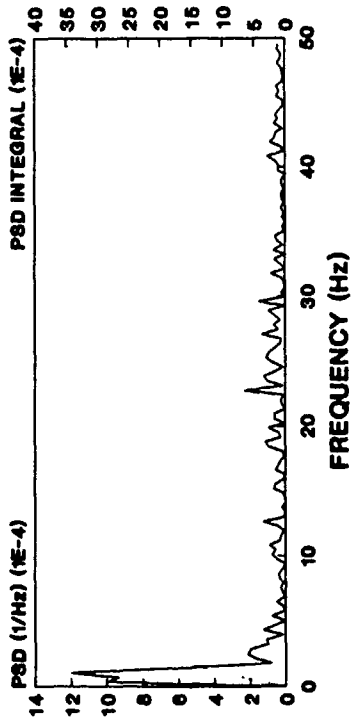
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 030

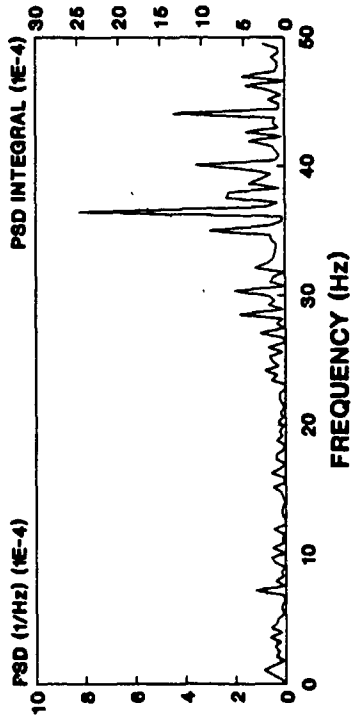
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 030

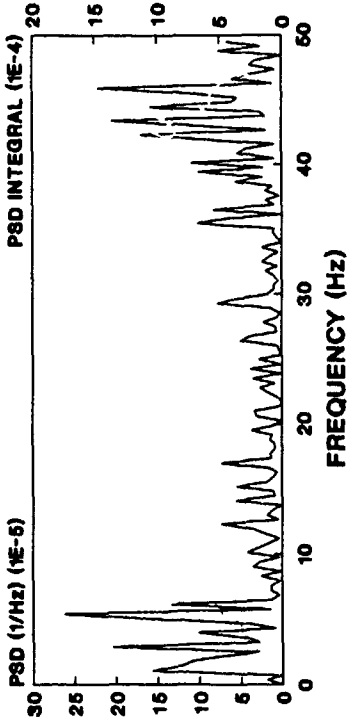
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 030

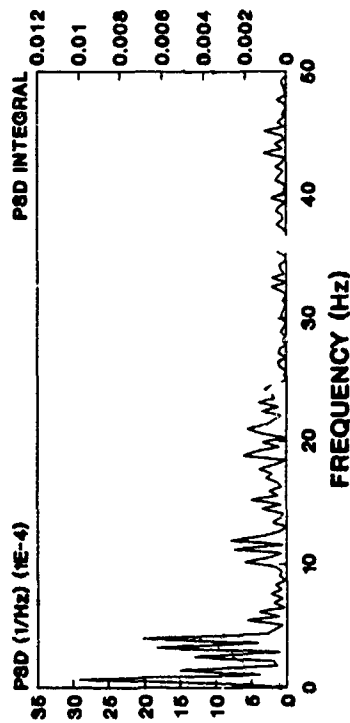
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 030

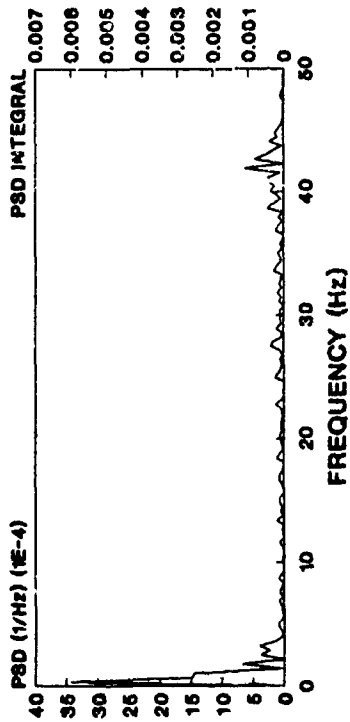
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 030

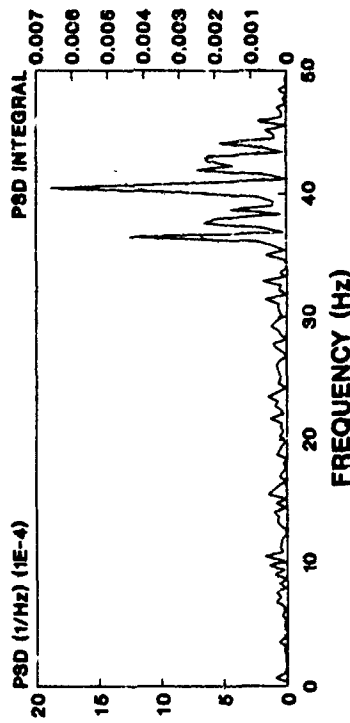
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 030

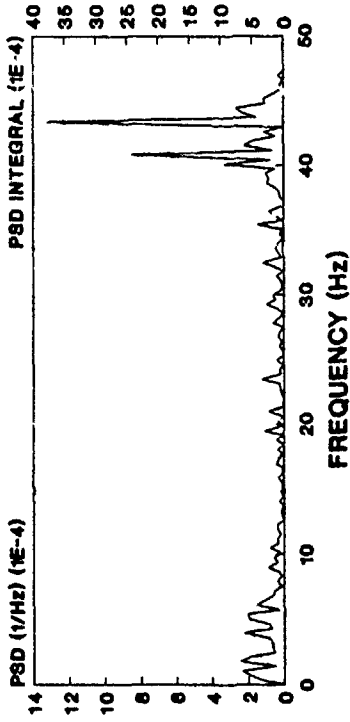
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 030

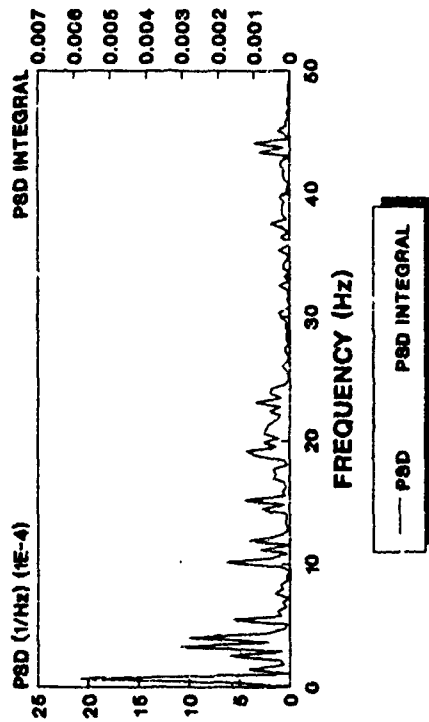
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

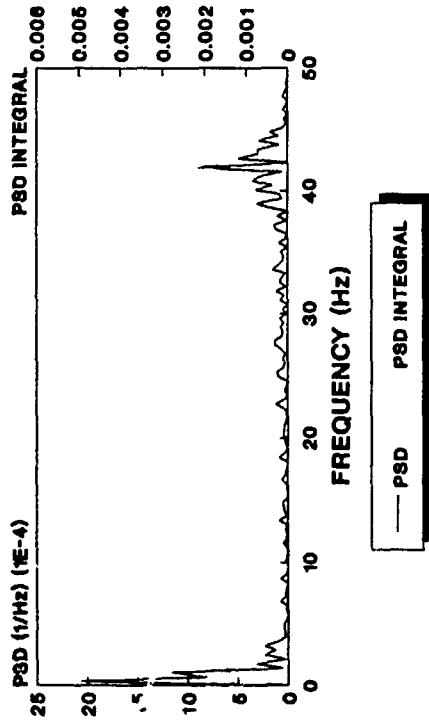
CYLINDER - HT 0.00 - THETA 30 - AZ 030

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



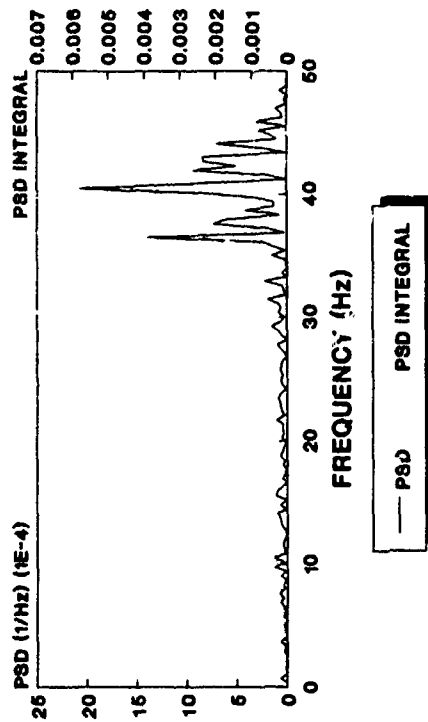
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



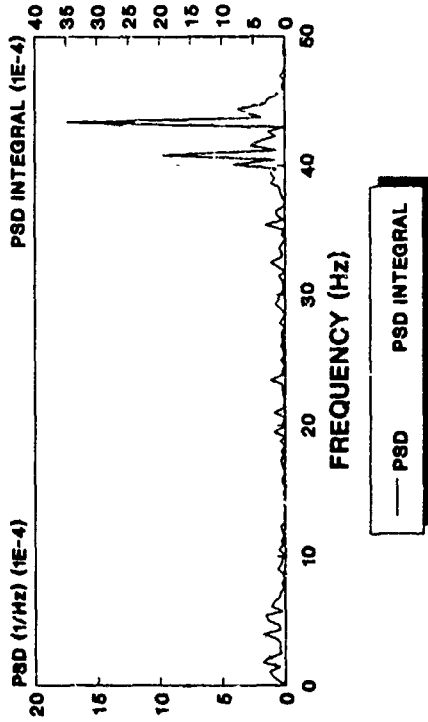
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



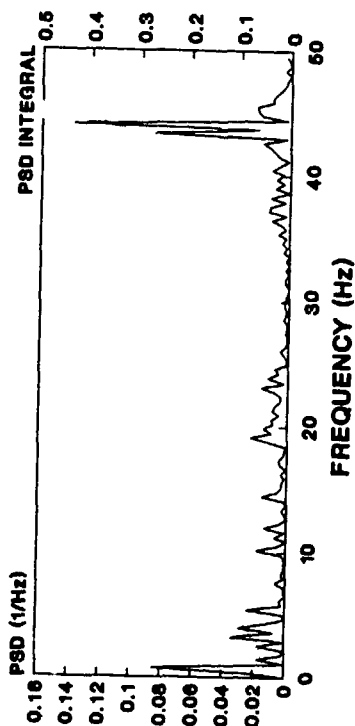
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



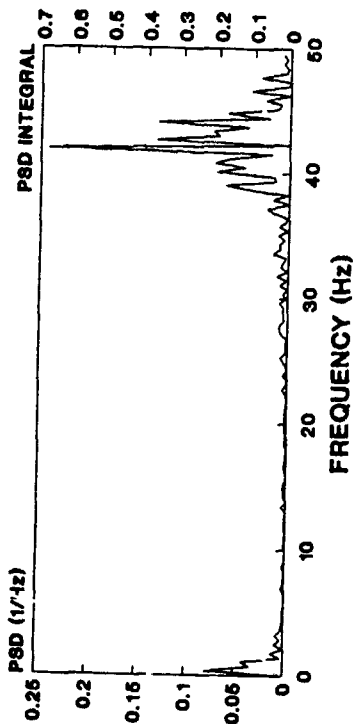
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



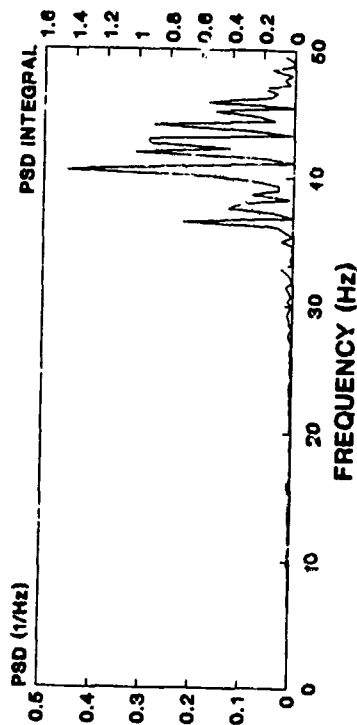
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



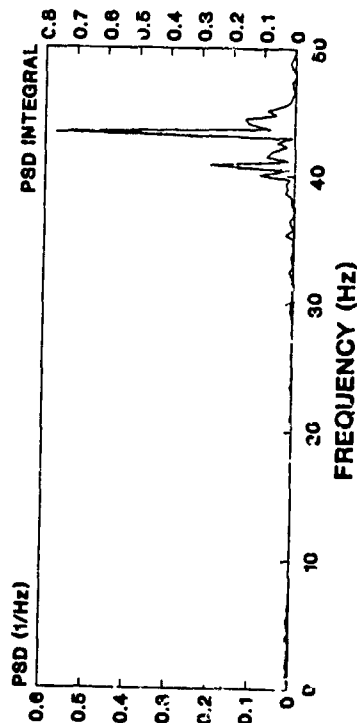
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



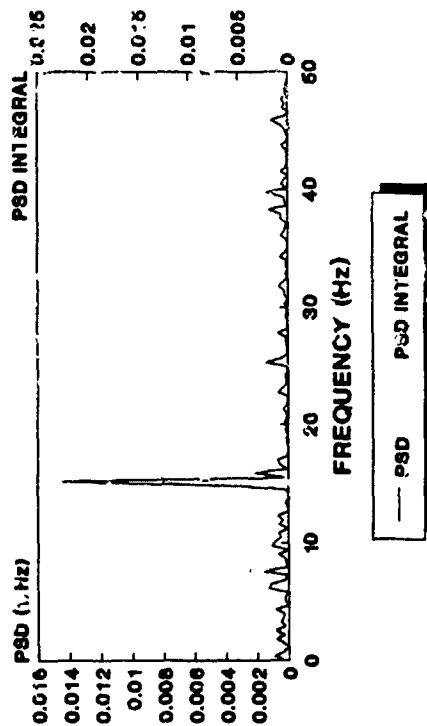
CYLINDER - HT 8.99 - THETA 30 - AZ 030

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



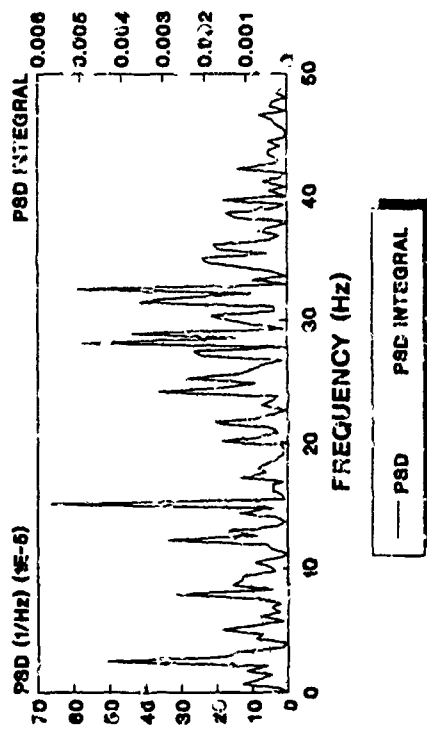
CYLINDER - HT 8.99 - THETA 30 - AZ 030

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



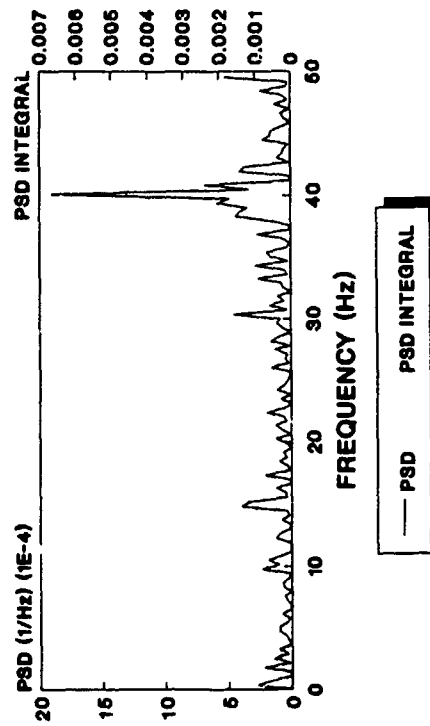
CYLINDER - HT 8.99 - THETA 30 - AZ 045

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



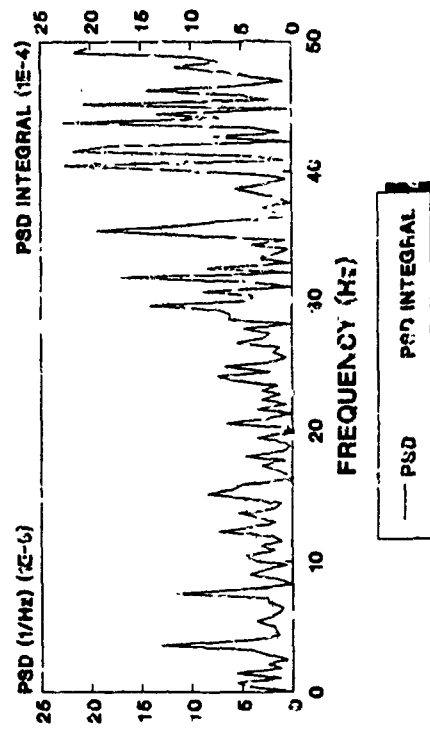
CYLINDER - HT 8.99 - THETA 30 - AZ 045

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



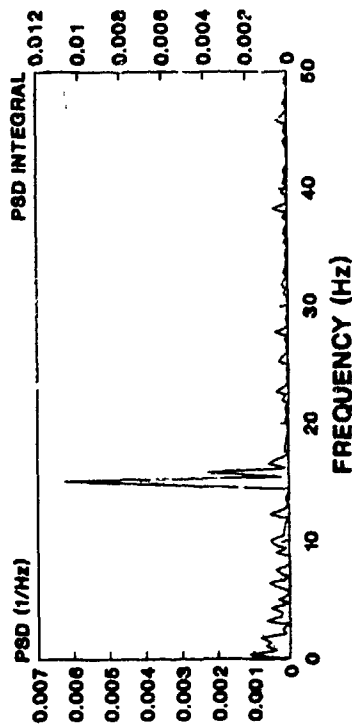
CYLINDER - HT 8.99 - THETA 30 - AZ 045

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



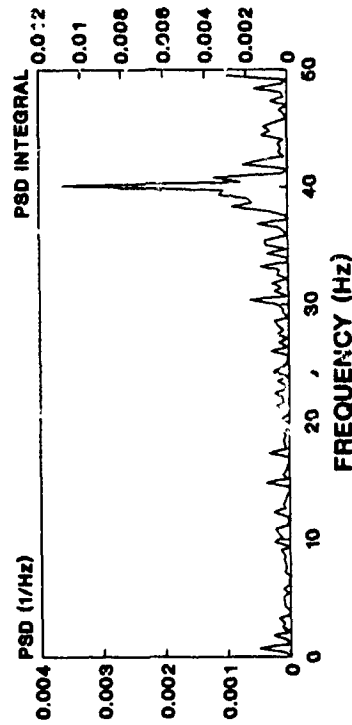
CYLINDER - HT 8.99 - THETA 30 - AZ 045

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



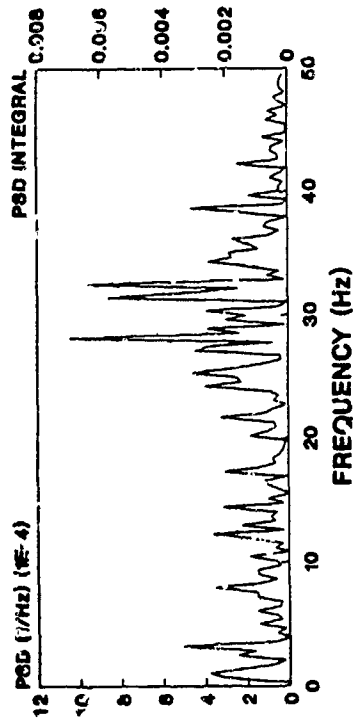
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



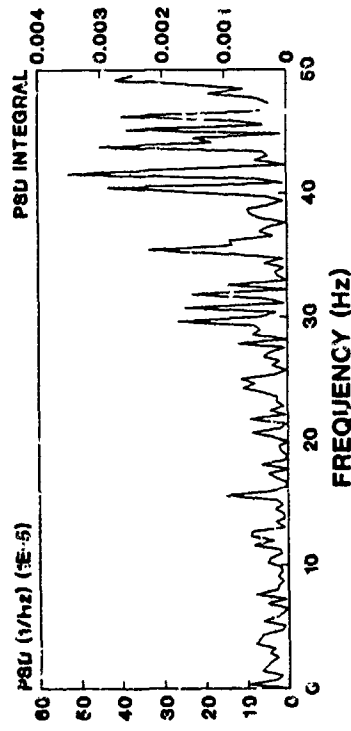
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



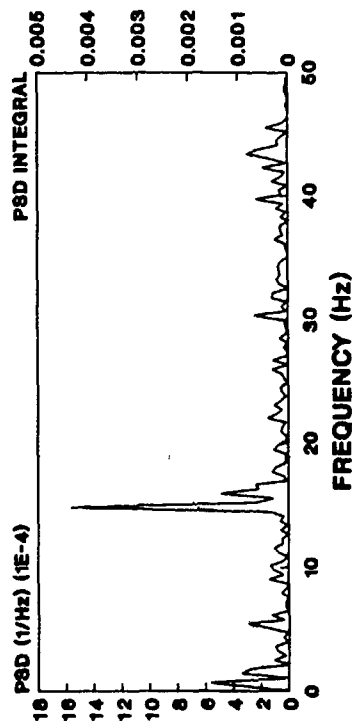
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



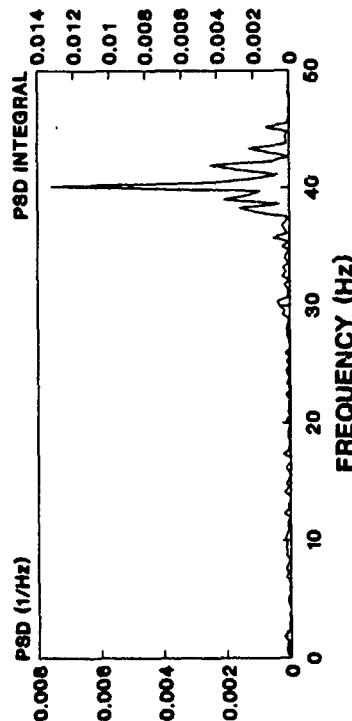
CYLINDER - HT 8.99 - THETA 30 - AZ 046

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



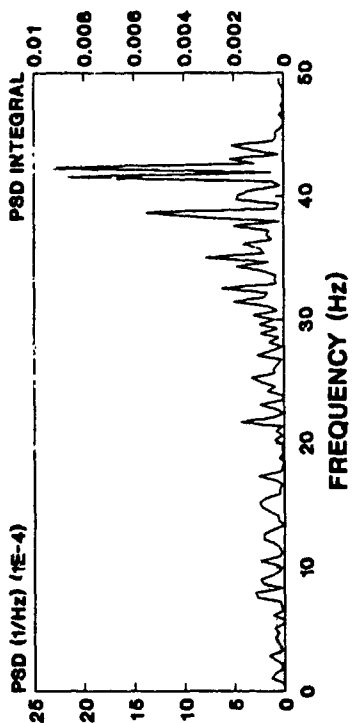
CYLINDER - HT 8.99 - THETA 30 - AZ 046

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



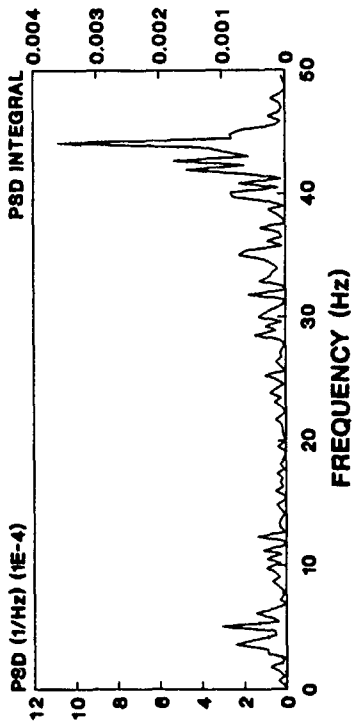
CYLINDER - HT 8.99 - THETA 30 - AZ 046

FORCE COEFF - LATERAL 30 FT/SEC NOMINAL



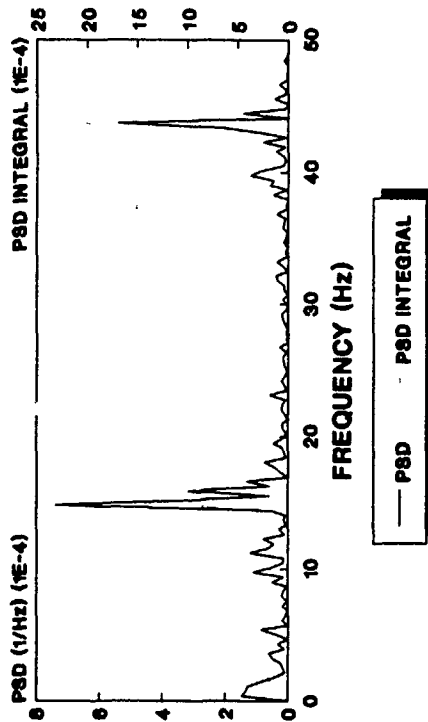
CYLINDER - HT 8.99 - THETA 30 - AZ 046

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



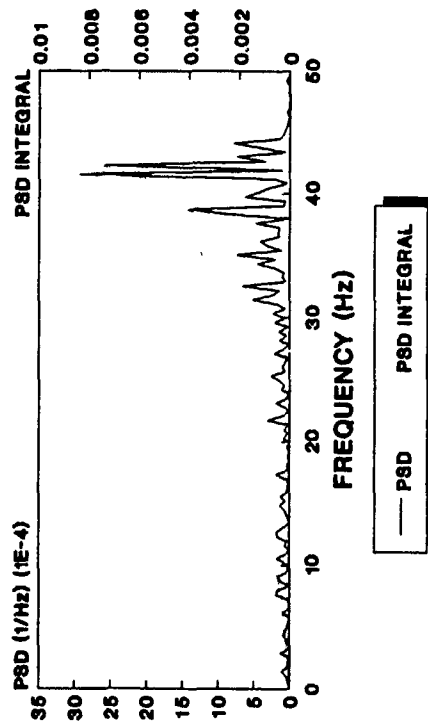
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



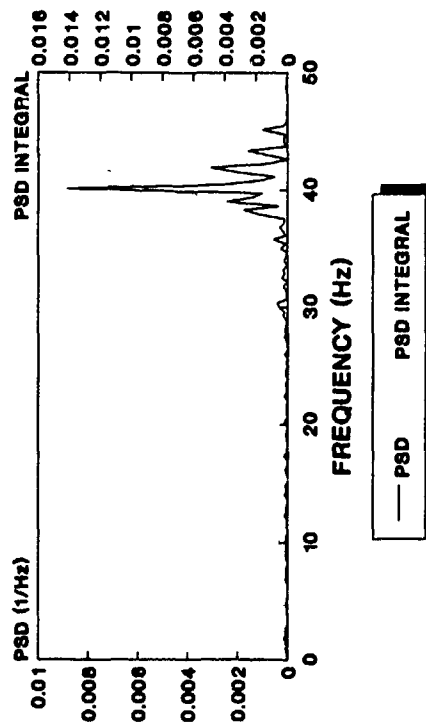
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



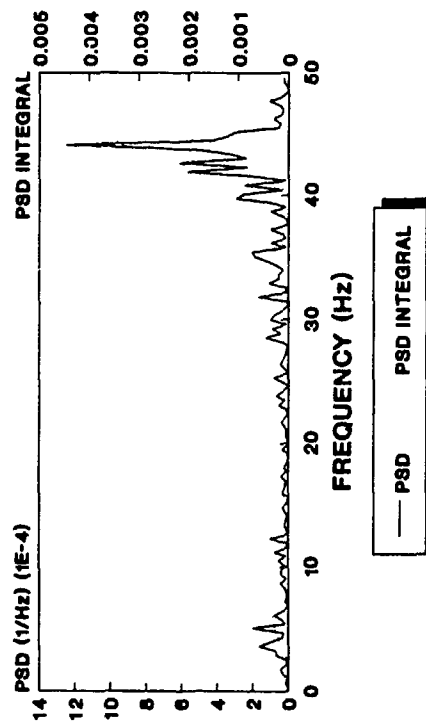
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



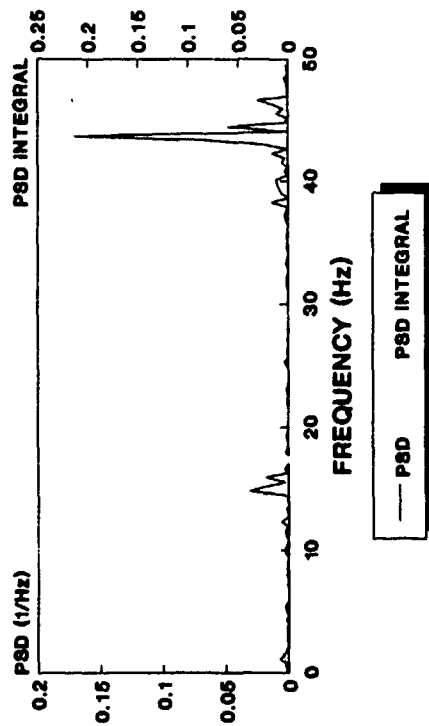
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



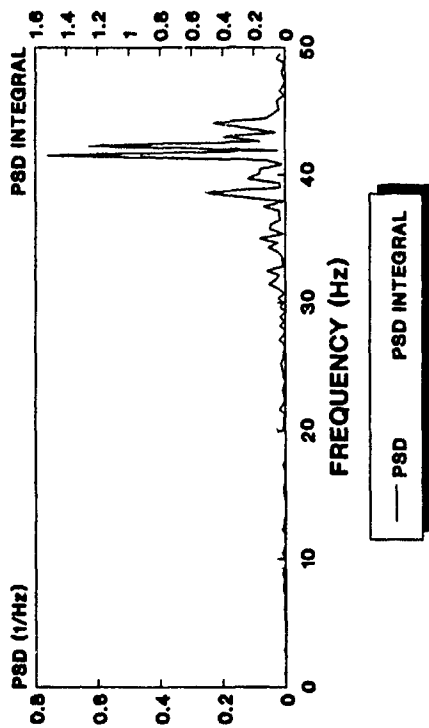
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



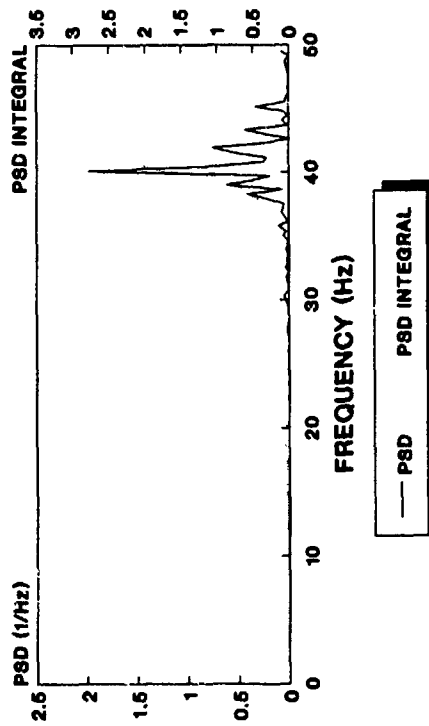
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



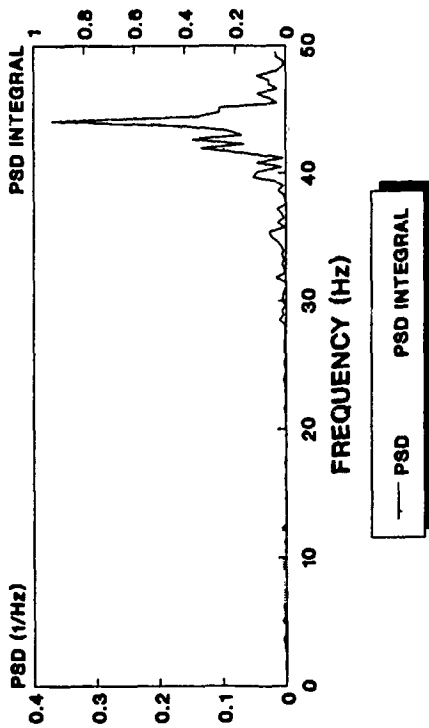
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



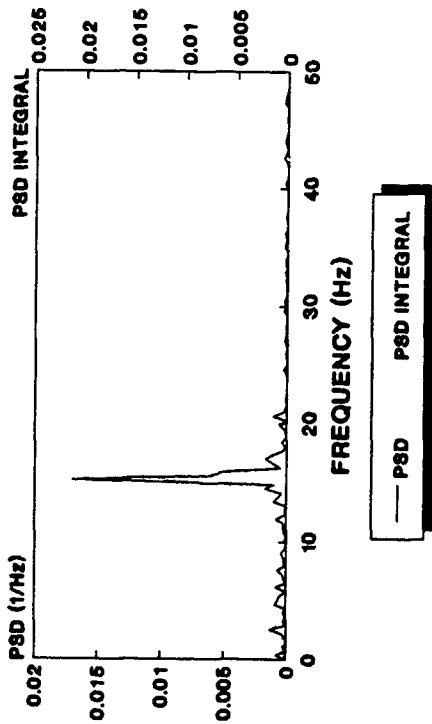
CYLINDER - HT 8.99 - THETA 30 - AZ 046

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



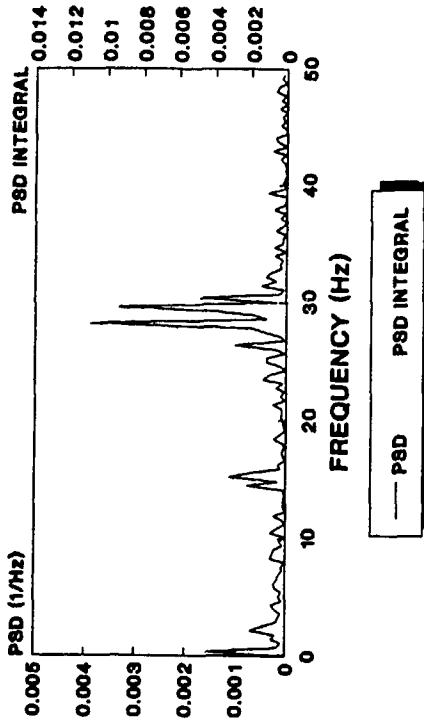
CYLINDER - HT 8.99 - THETA 30 - AZ 046

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



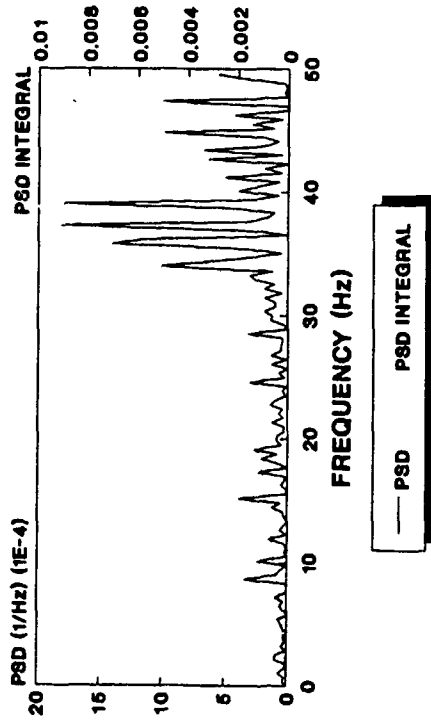
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



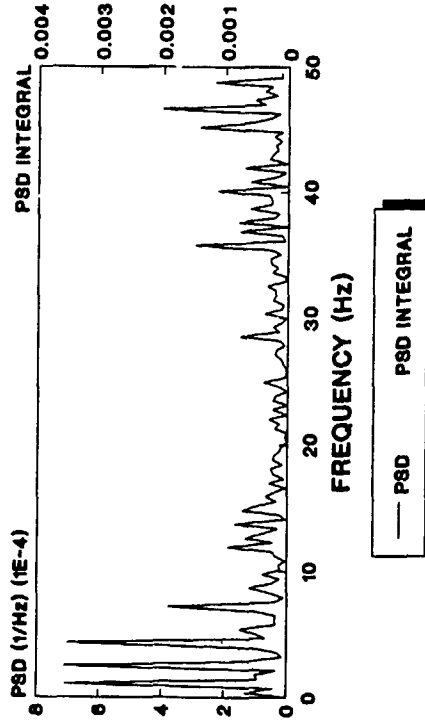
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



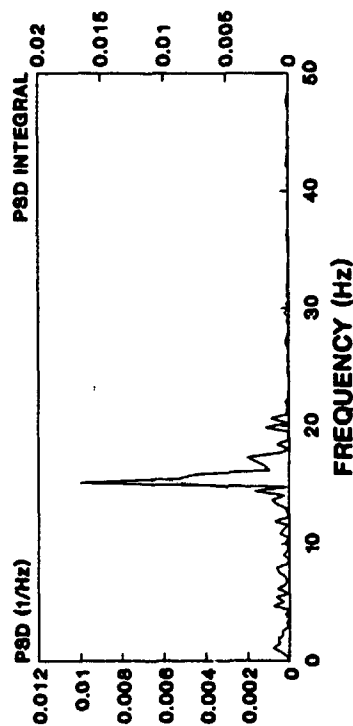
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



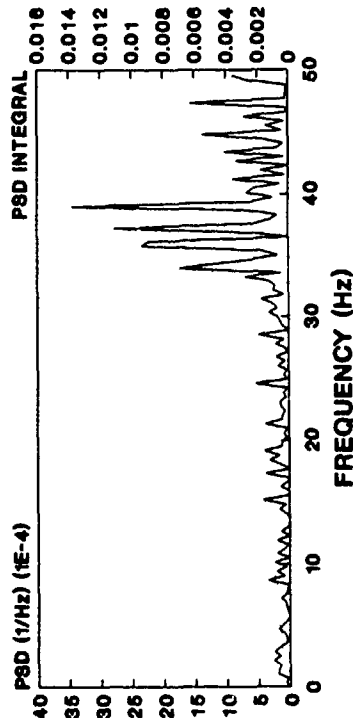
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



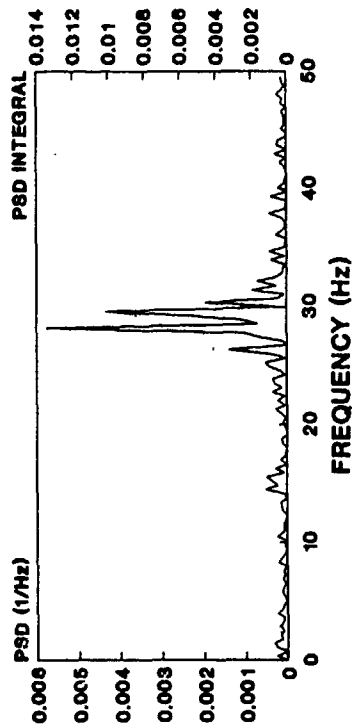
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



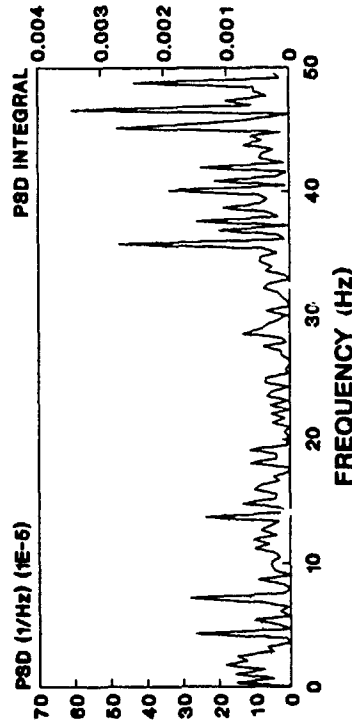
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



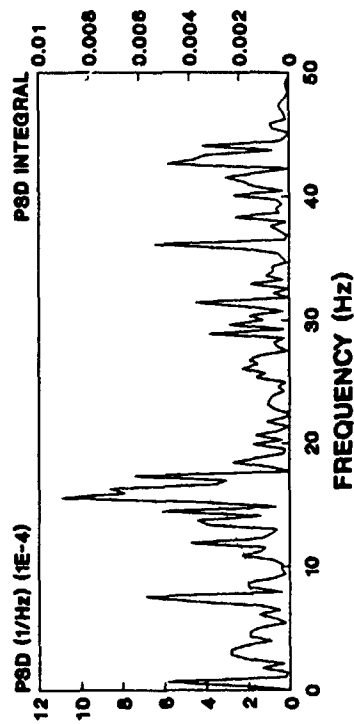
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



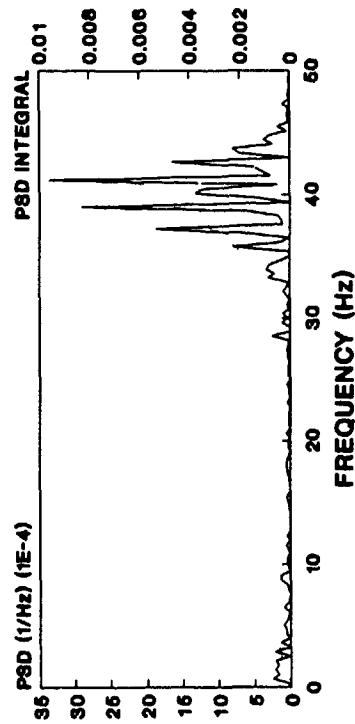
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



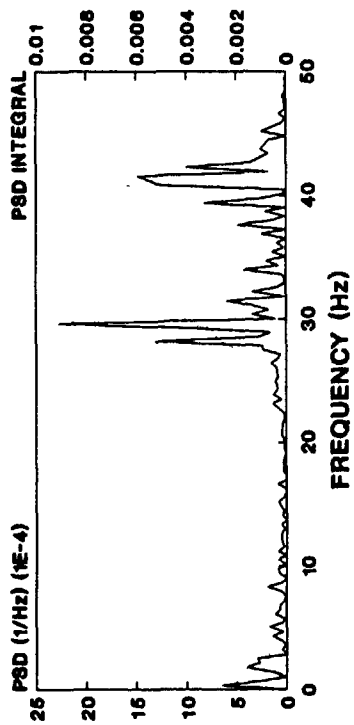
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



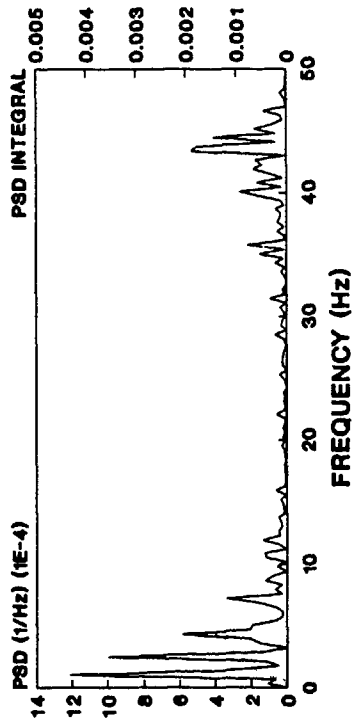
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



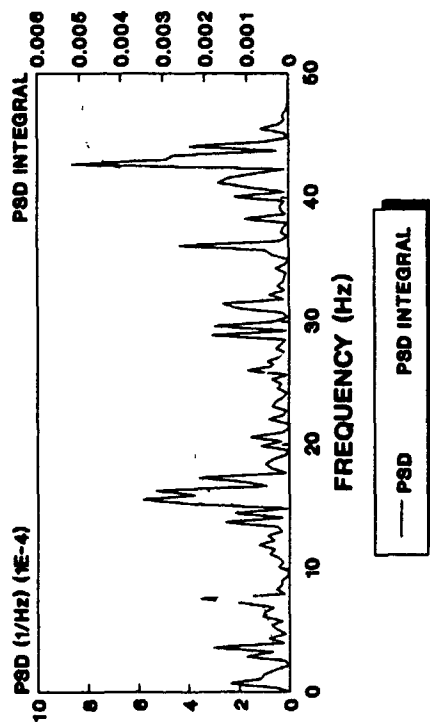
CYLINDER - HT 8.99 - THETA 30 - AZ 060

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



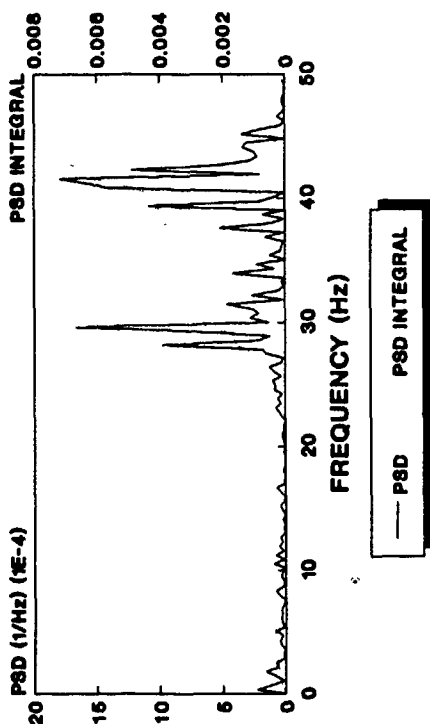
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



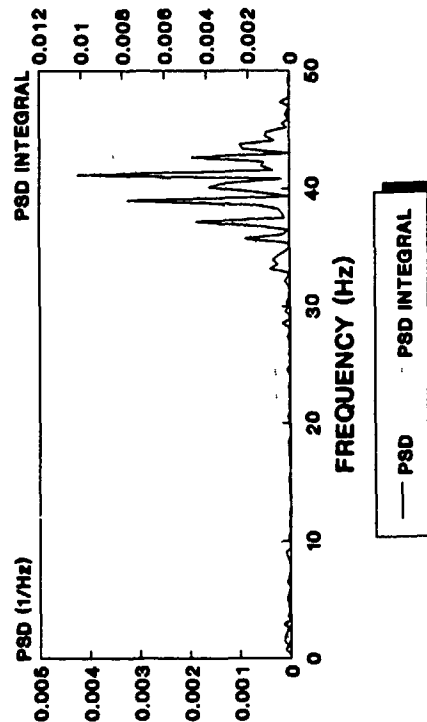
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



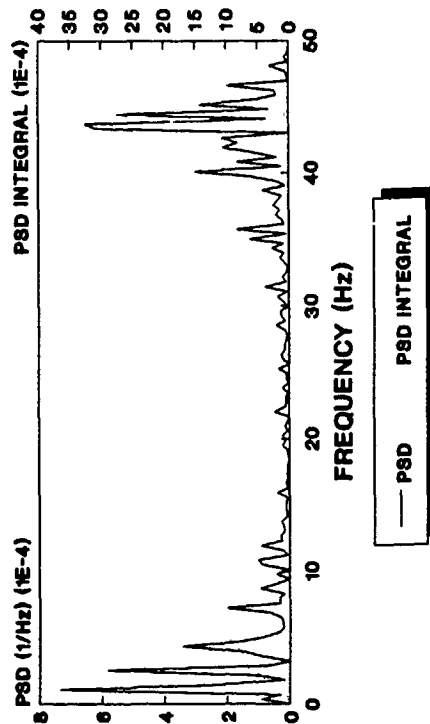
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



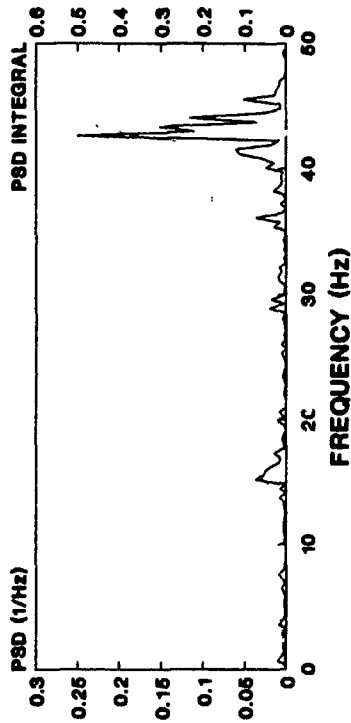
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



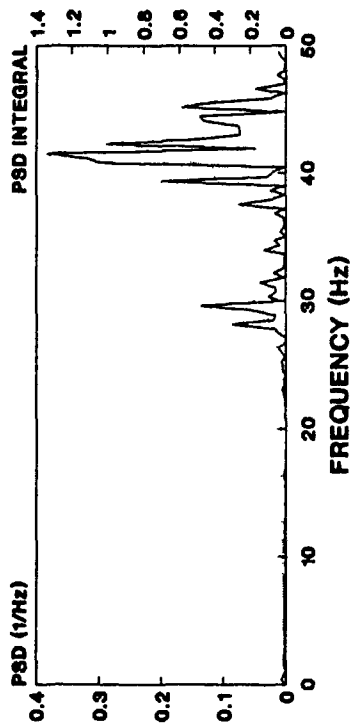
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



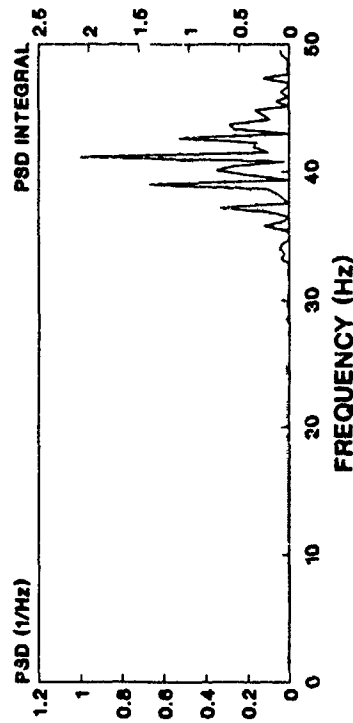
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



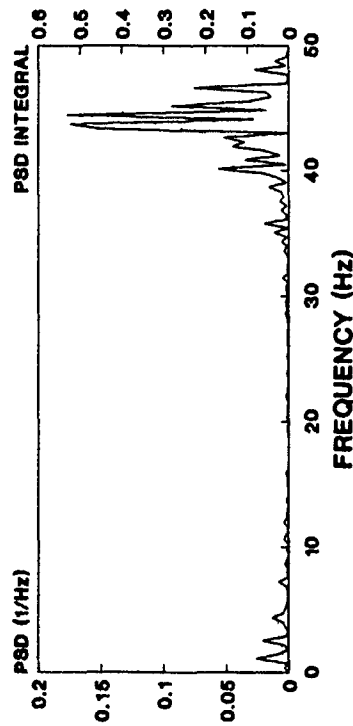
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



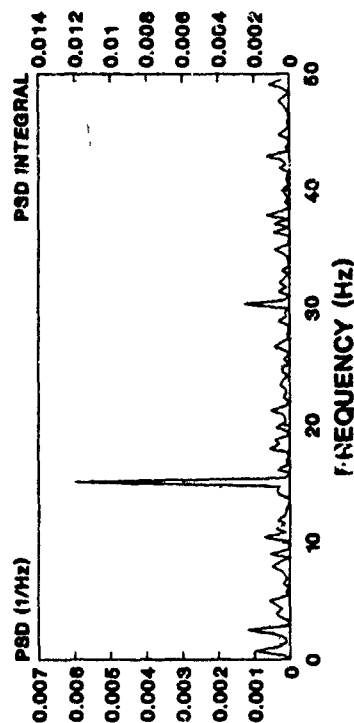
CYLINDER - HT 8.99 - THETA 30 - AZ 060

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 30 - AZ 060

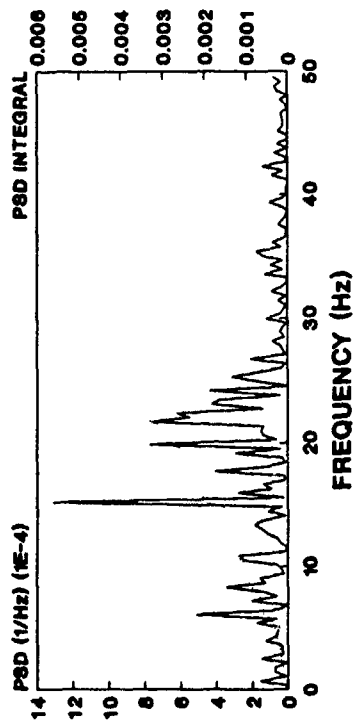
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 090

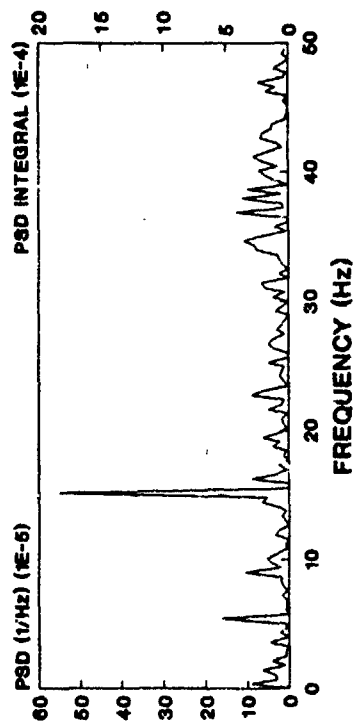
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 090

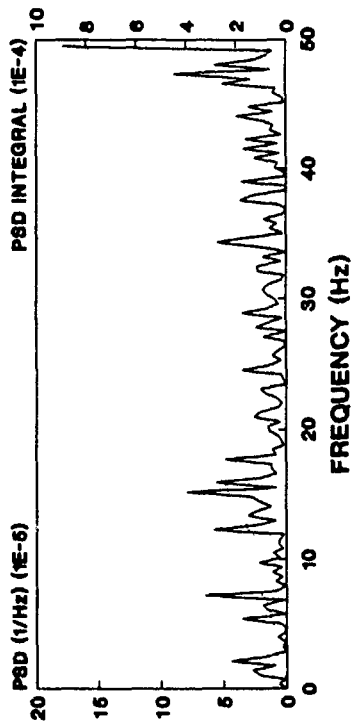
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 090

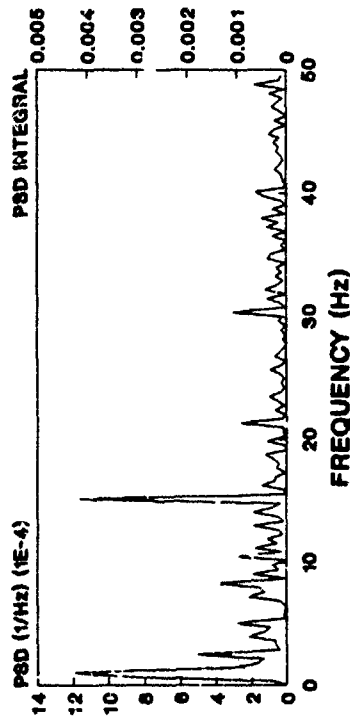
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

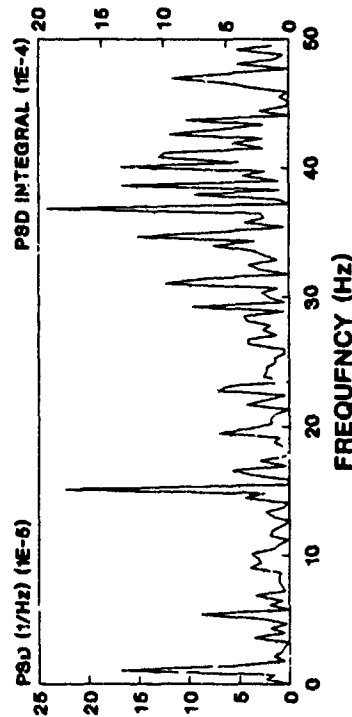
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



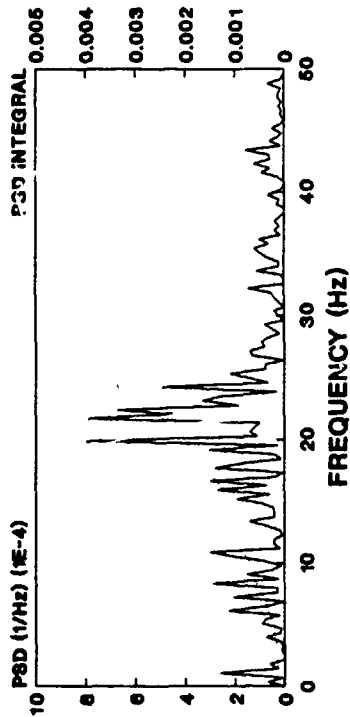
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



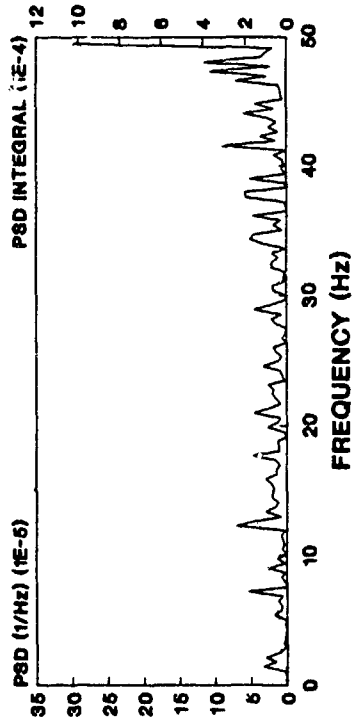
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



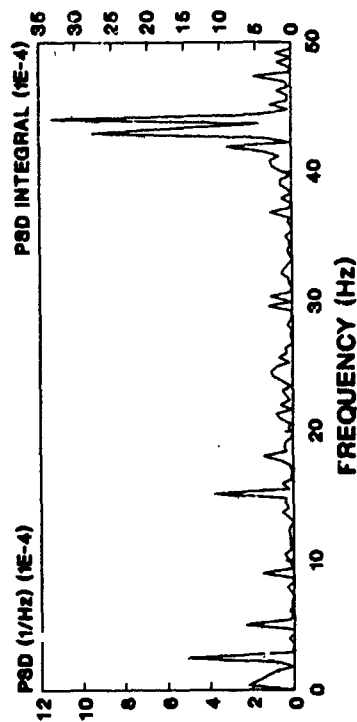
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



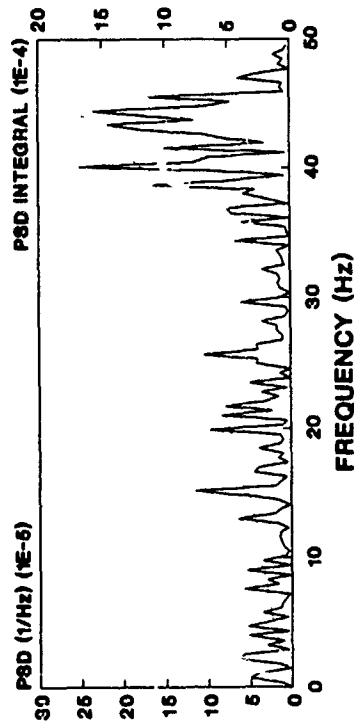
CYLINDER - HT 8.99 - THETA 30 - AZ 090

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



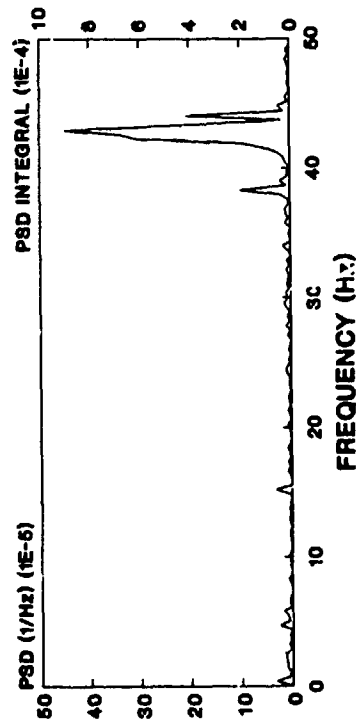
CYLINDER - HT 8.99 - THETA 30 - AZ 090

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



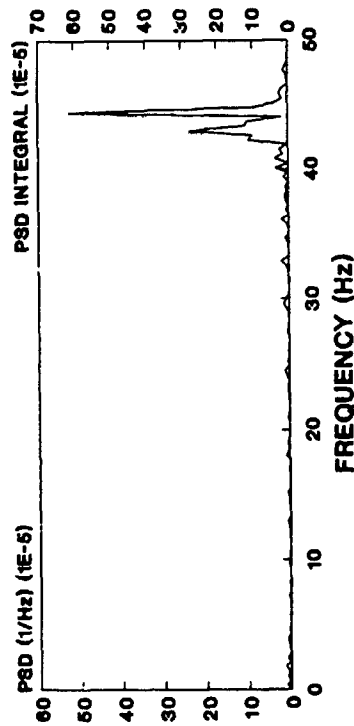
CYLINDER - HT 8.99 - THETA 30 - AZ 090

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



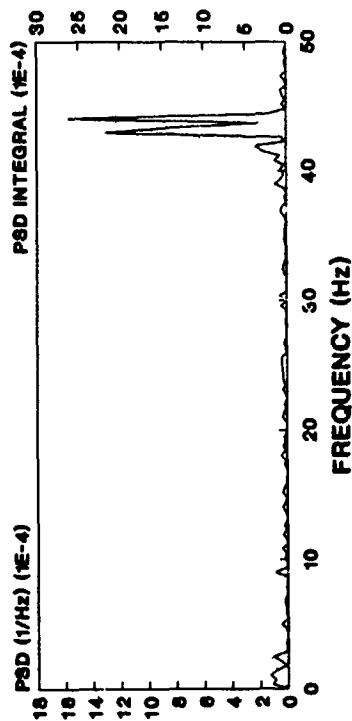
CYLINDER - HT 8.99 - THETA 30 - AZ 090

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



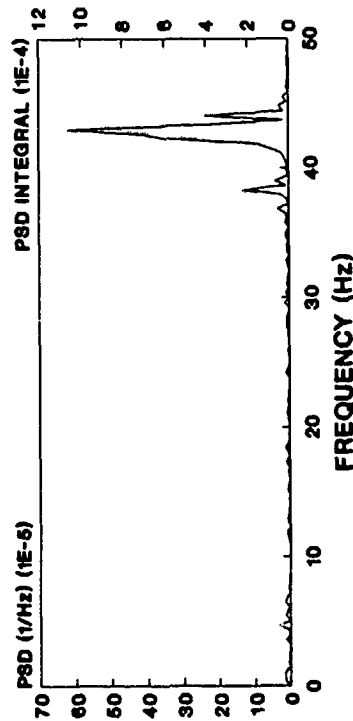
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



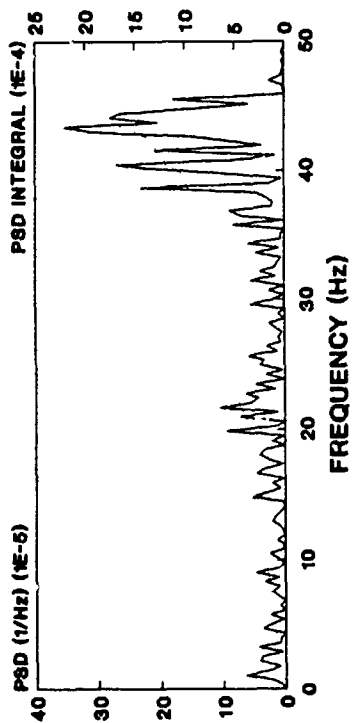
CYLINDER - HT 8.88 - THETA 30 - AZ 090

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



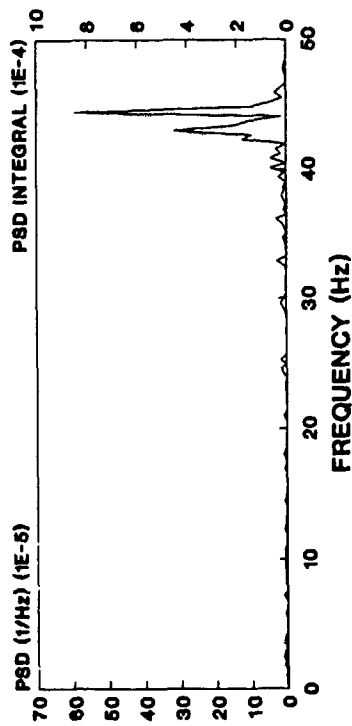
CYLINDER - HT 8.88 - THETA 30 - AZ 090

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



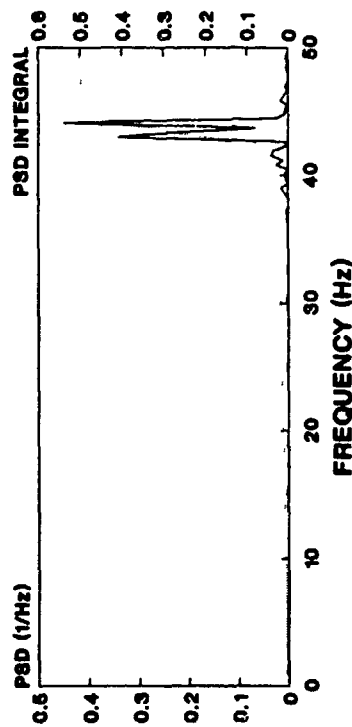
CYLINDER - HT 8.88 - THETA 30 - AZ 090

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



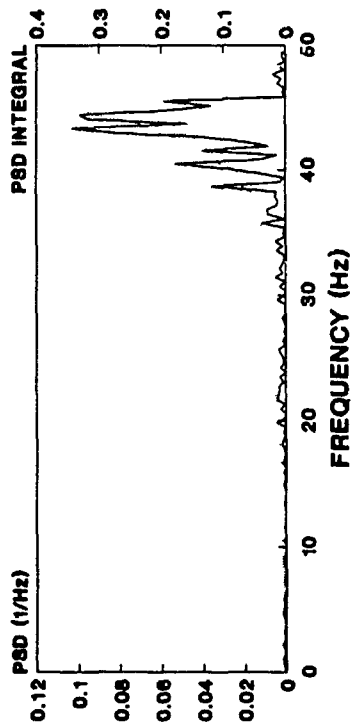
CYLINDER - HT 8.88 - THETA 30 - AZ 090

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



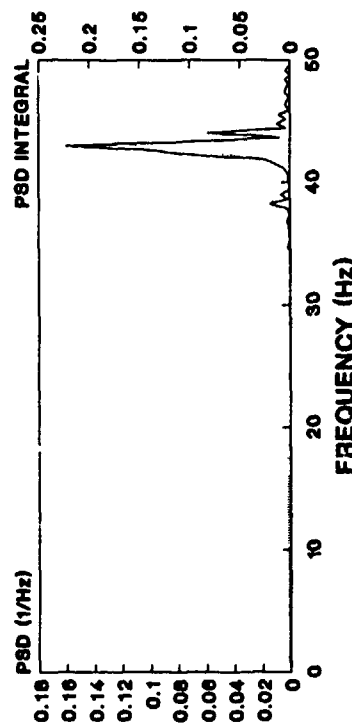
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



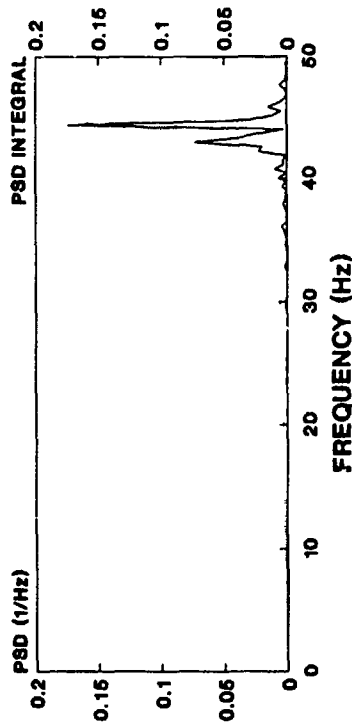
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



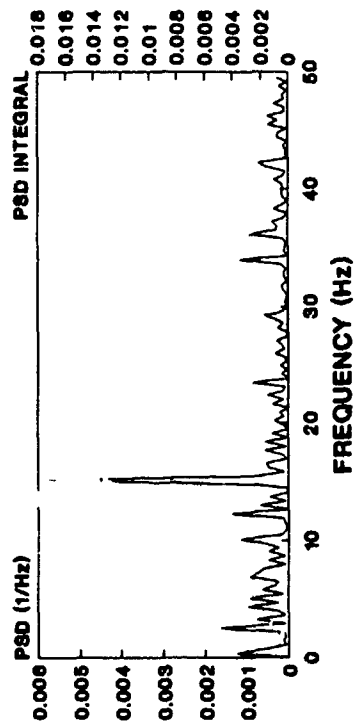
CYLINDER - HT 8.99 - THETA 30 - AZ 090

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



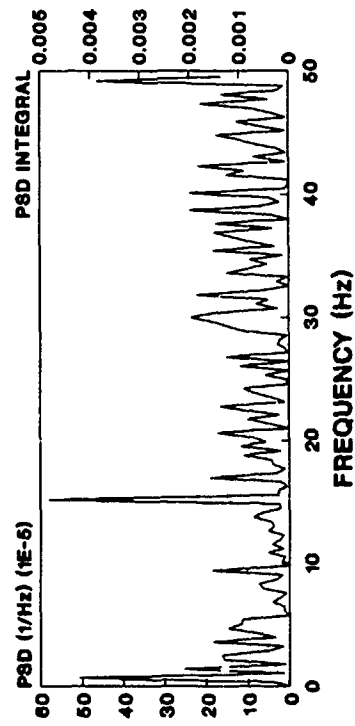
CYLINDER - HT 8.99 - THETA 30 - AZ 090

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



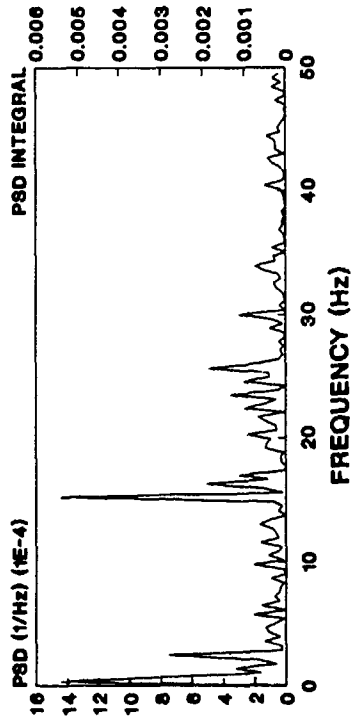
CYLINDER - HT 8.99 - THETA 30 - AZ 120

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



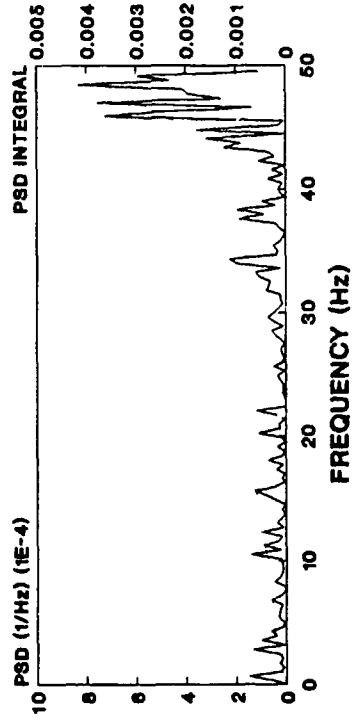
CYLINDER - HT 8.99 - THETA 30 - AZ 120

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



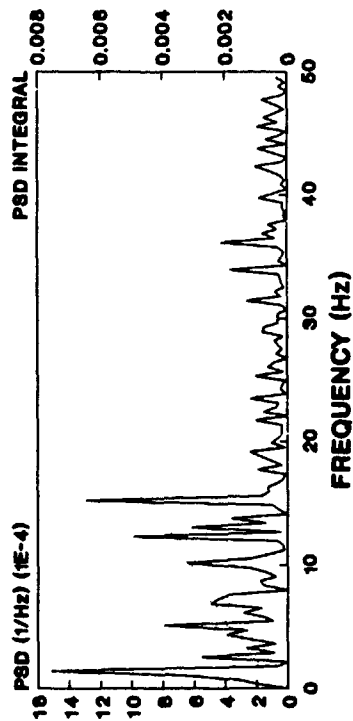
CYLINDER - HT 8.99 - THETA 30 - AZ 120

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 30 - AZ 120

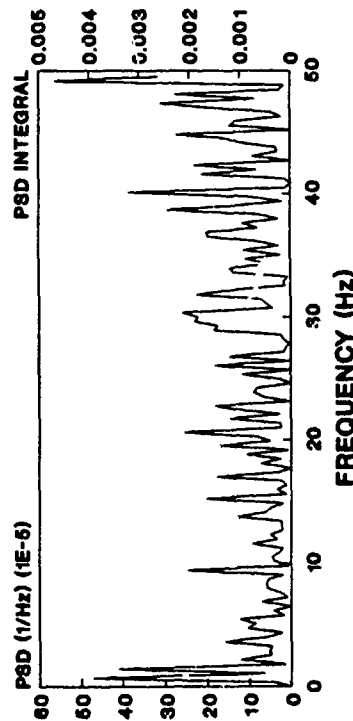
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 150

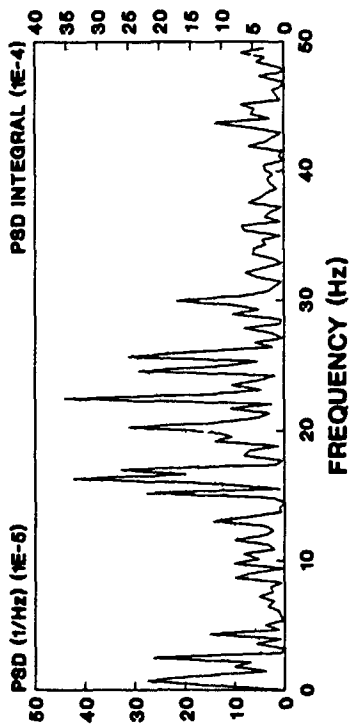
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 150

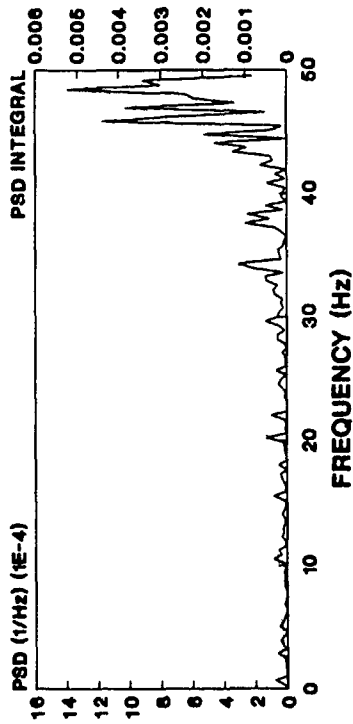
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 120

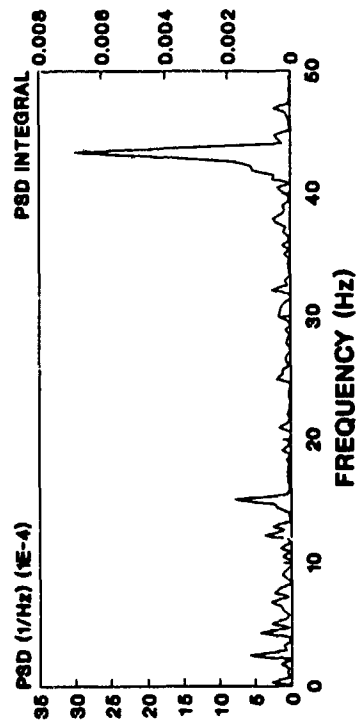
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

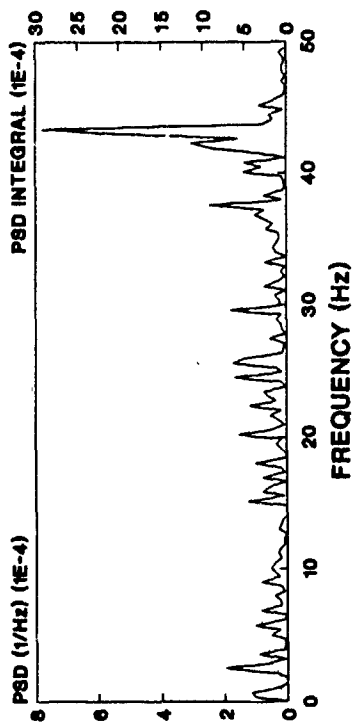
CYLINDER - HT 8.99 - THETA 30 - AZ 120

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



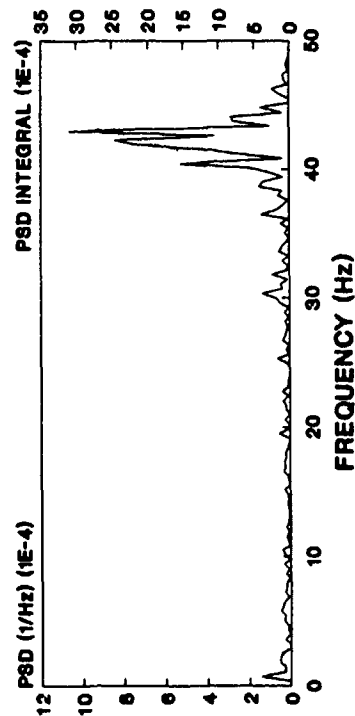
CYLINDER - HT 0.99 - THETA 30 - AZ 120

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



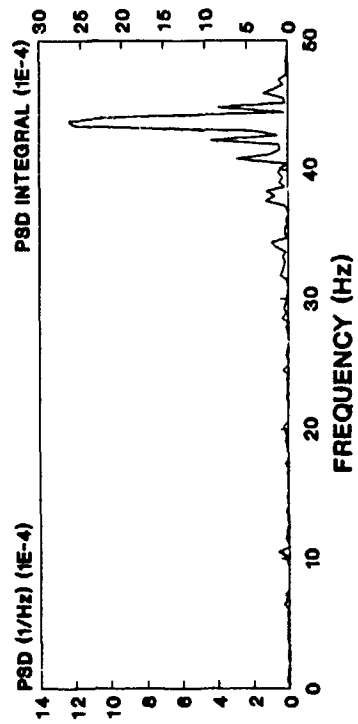
CYLINDER - HT 0.99 - THETA 30 - AZ 120

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



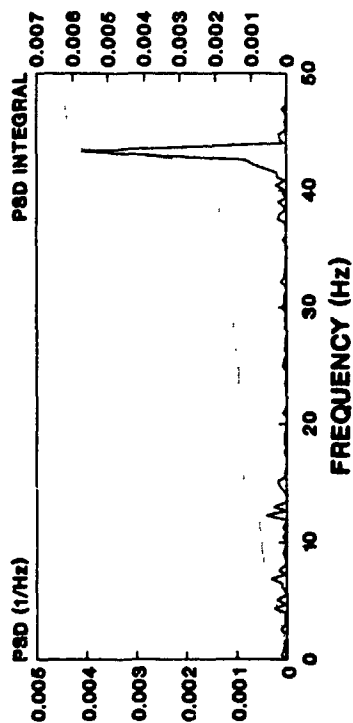
CYLINDER - HT 0.99 - THETA 30 - AZ 120

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



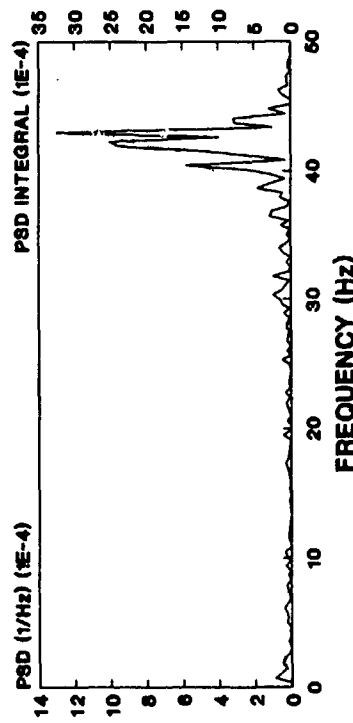
CYLINDER - HT 0.99 - THETA 30 - AZ 120

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



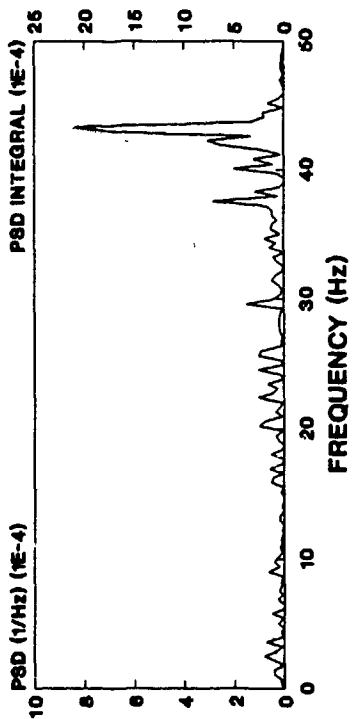
CYLINDER - HT 8.90 - THETA 30 - AZ 120

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



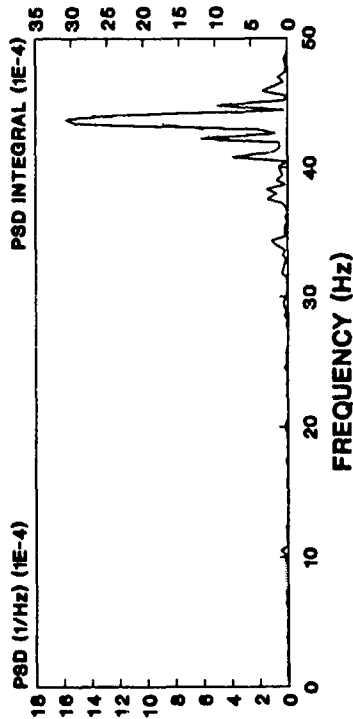
CYLINDER - HT 8.90 - THETA 30 - AZ 120

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



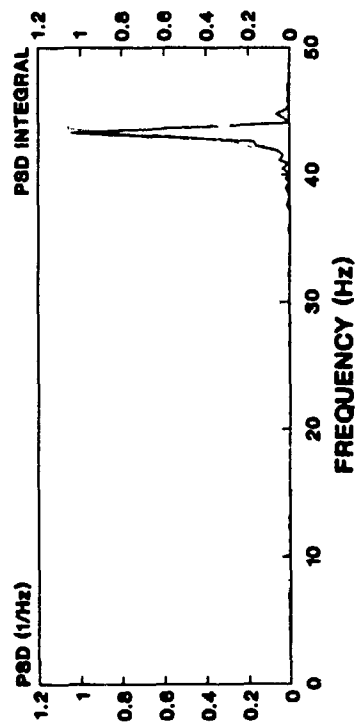
CYLINDER - HT 8.90 - THETA 30 - AZ 120

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.90 - THETA 30 - AZ 120

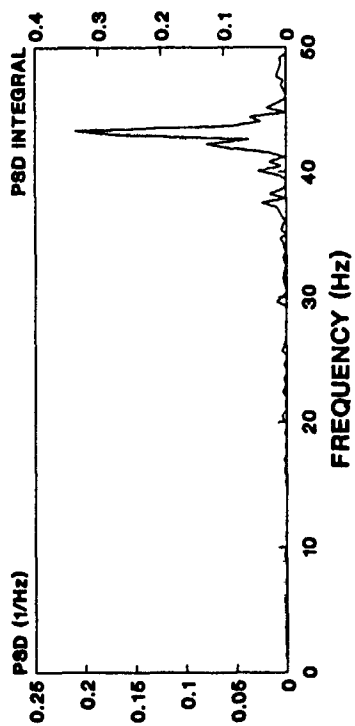
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 120

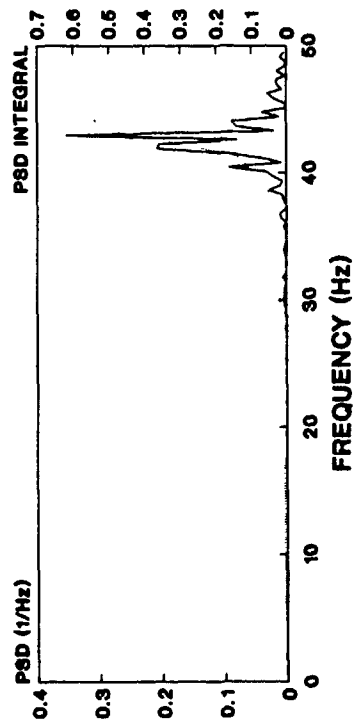
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 120

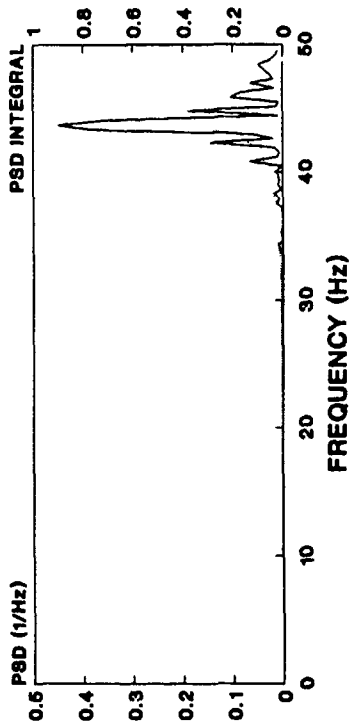
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.99 - THETA 30 - AZ 120

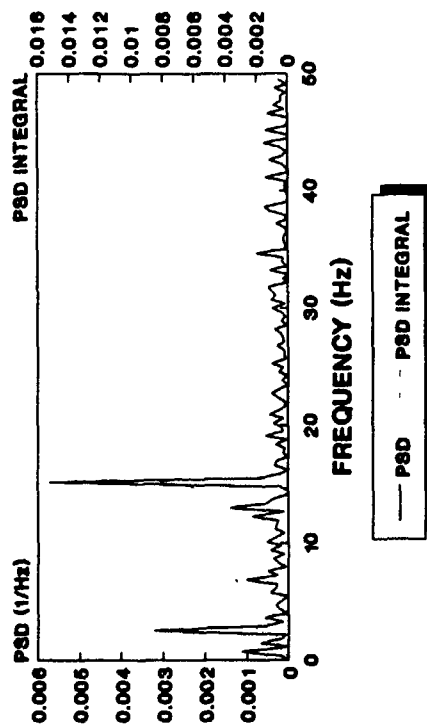
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

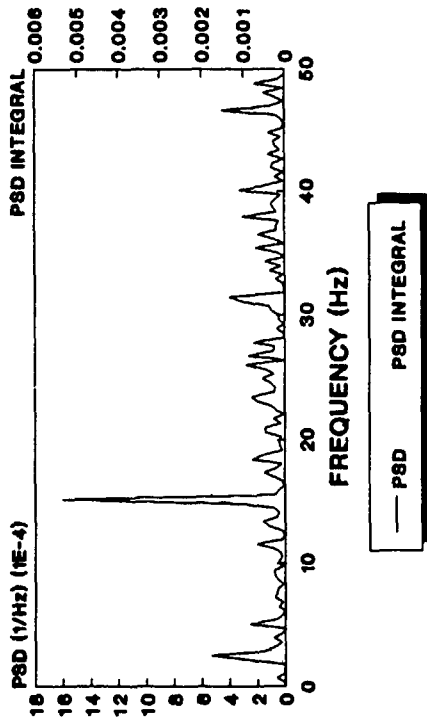
CYLINDER - HT 8.99 - THETA 30 - AZ 120

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



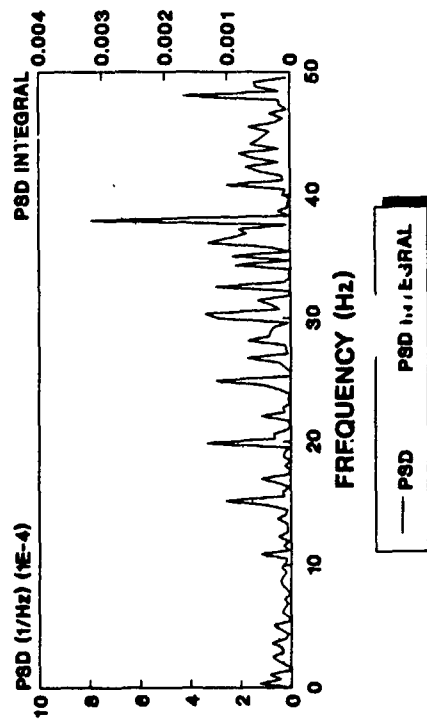
CYLINDER - HT 8.99 - THETA 30 - AZ 135

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



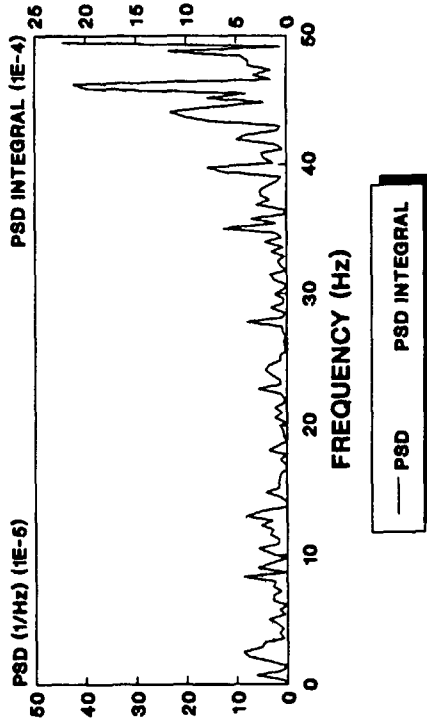
CYLINDER - HT 8.99 - THETA 30 - AZ 135

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



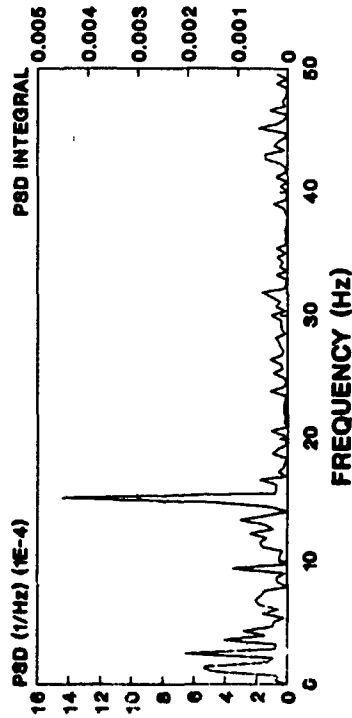
CYLINDER - HT 8.99 - THETA 30 - AZ 135

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



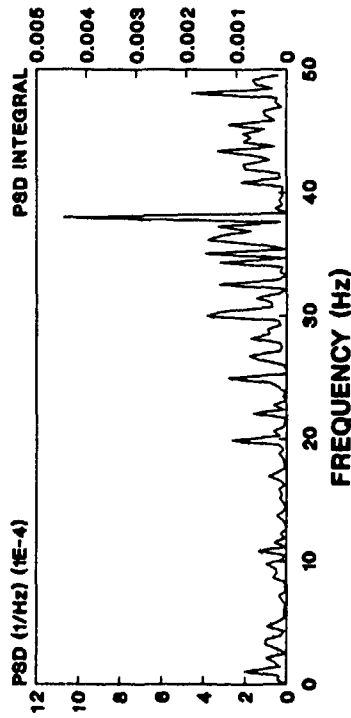
CYLINDER - HT 8.99 - THETA 30 - AZ 135

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



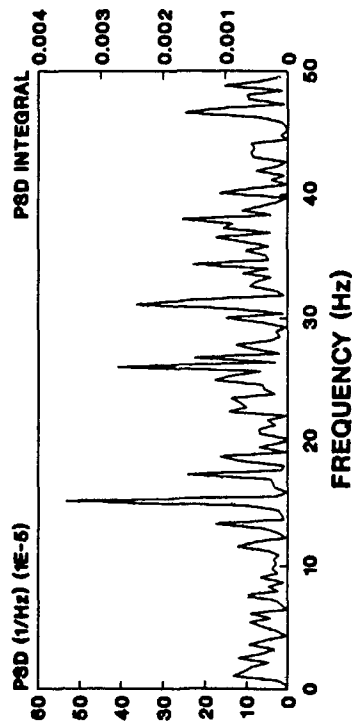
CYLINDER - HT 0.00 - THETA 30 - AZ 136

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



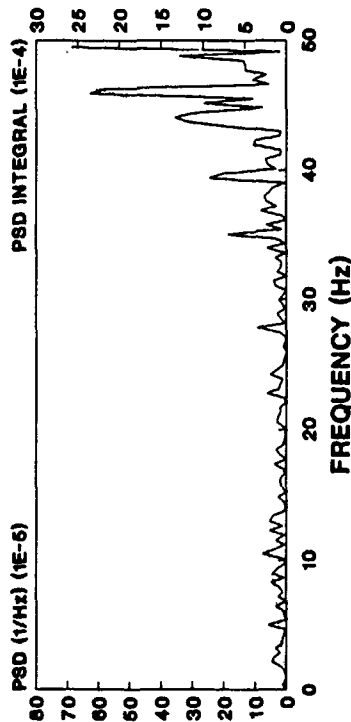
CYLINDER - HT 0.00 - THETA 30 - AZ 136

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



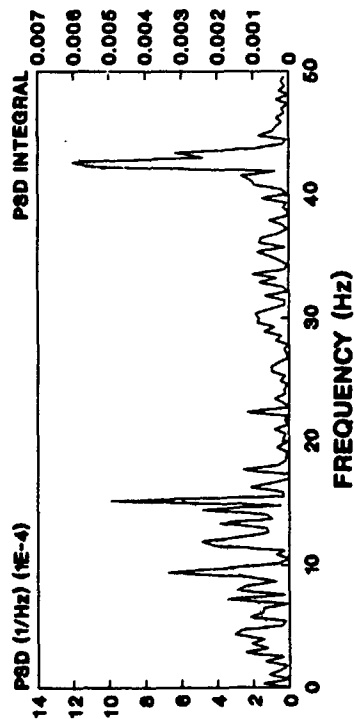
CYLINDER - HT 0.00 - THETA 30 - AZ 136

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 0.00 - THETA 30 - AZ 136

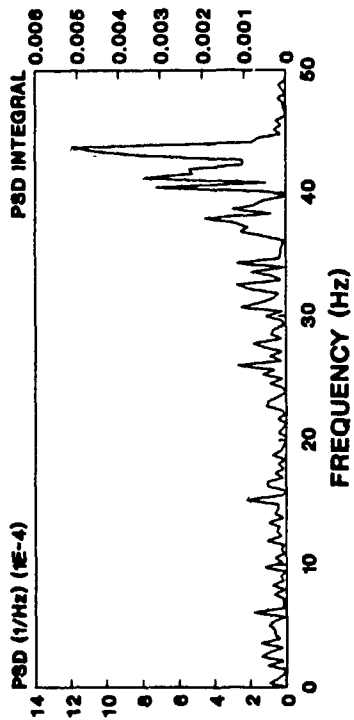
FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 136

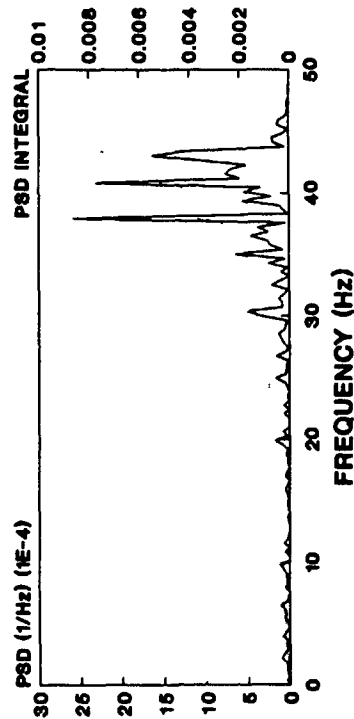
FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 136

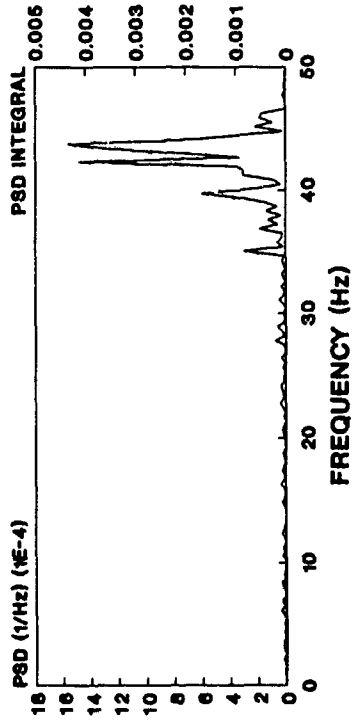
FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 0.00 - THETA 30 - AZ 136

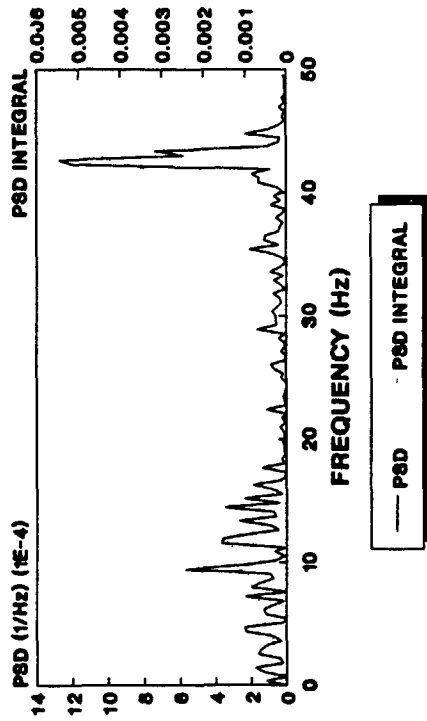
FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

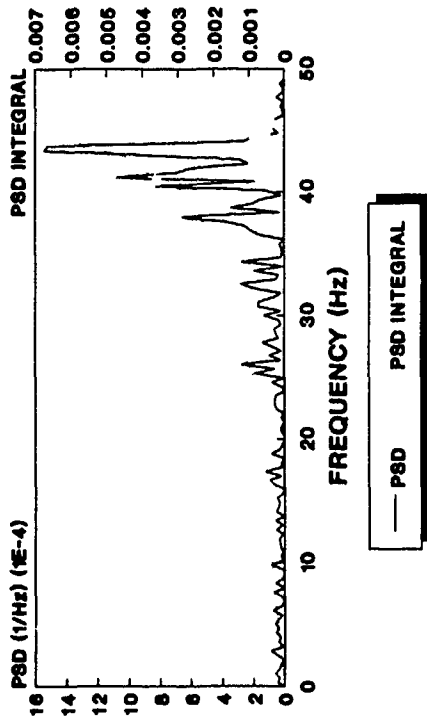
CYLINDER - HT 0.00 - THETA 30 - AZ 136

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



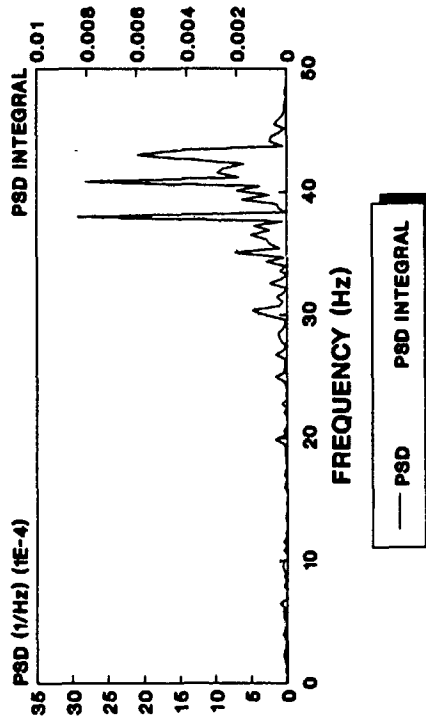
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



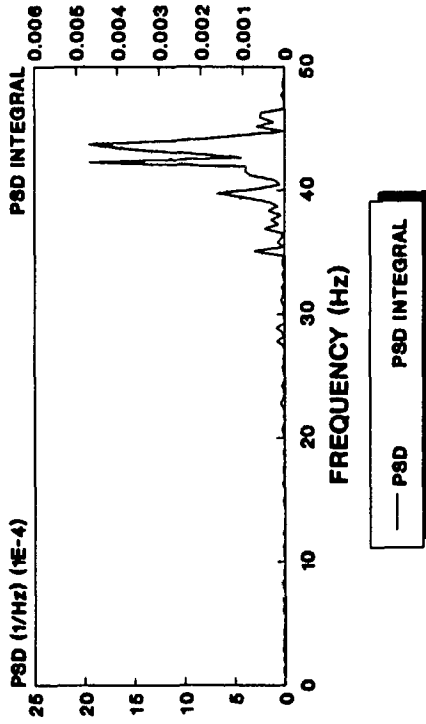
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



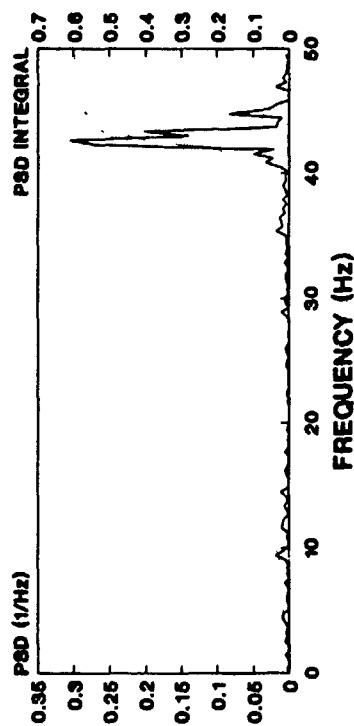
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



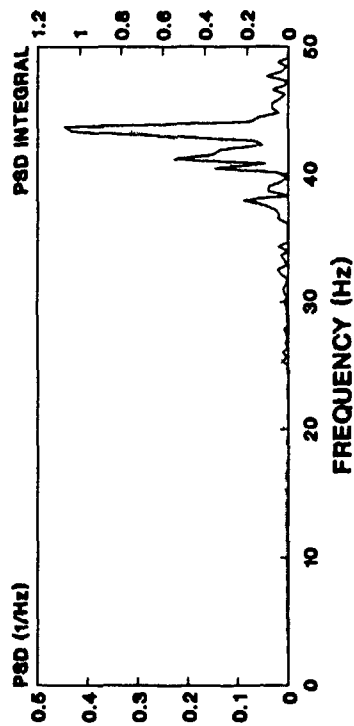
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



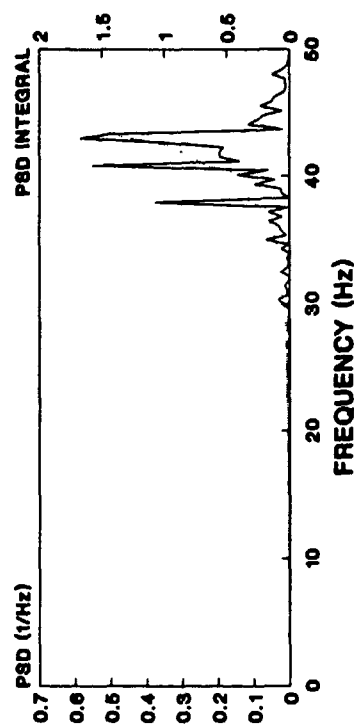
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



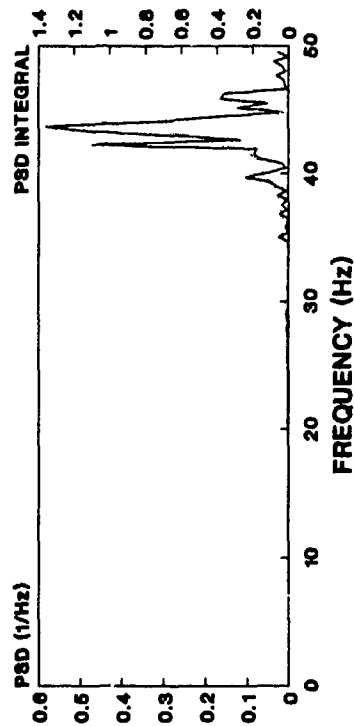
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



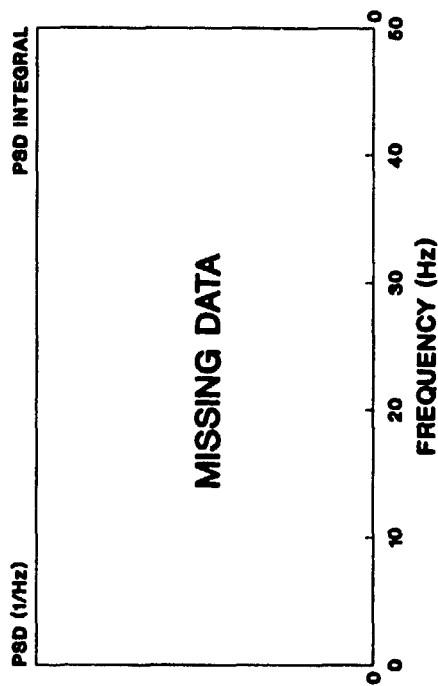
CYLINDER - HT 8.99 - THETA 30 - AZ 136

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



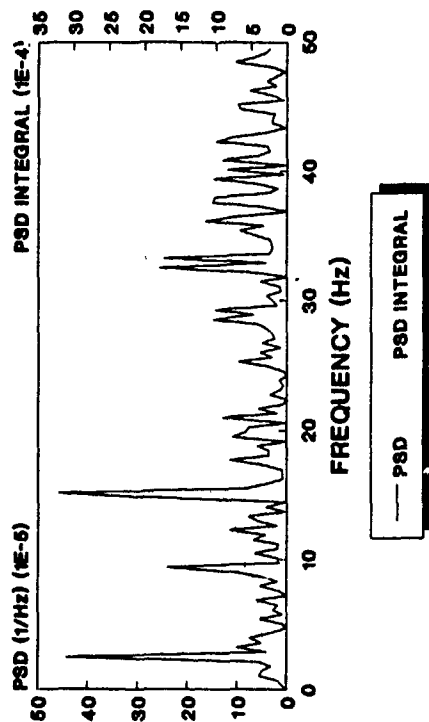
CYLINDER - HT 8.99 - THETA 30 - AZ 136

FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



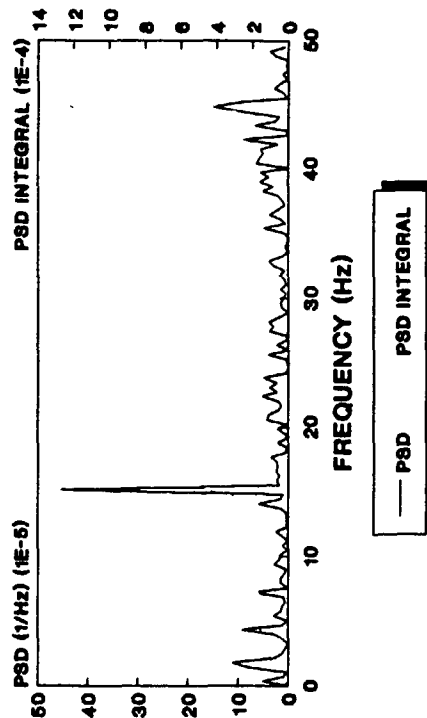
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



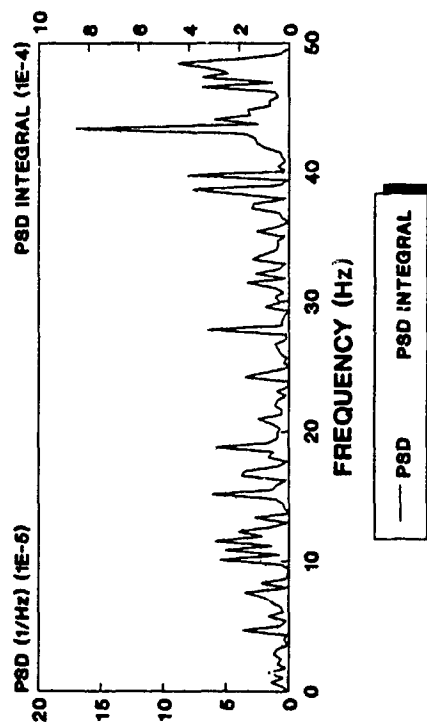
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



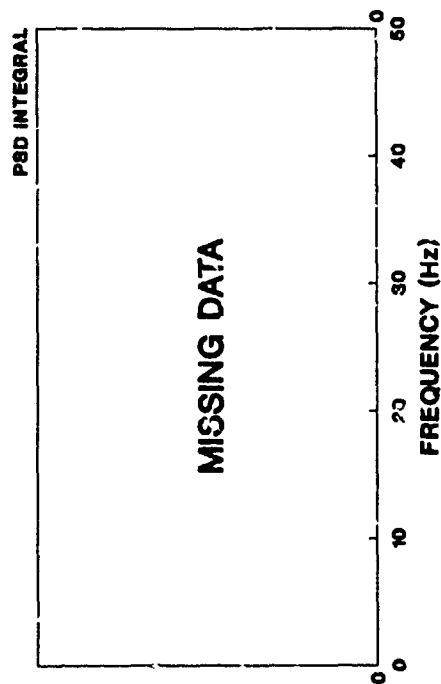
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



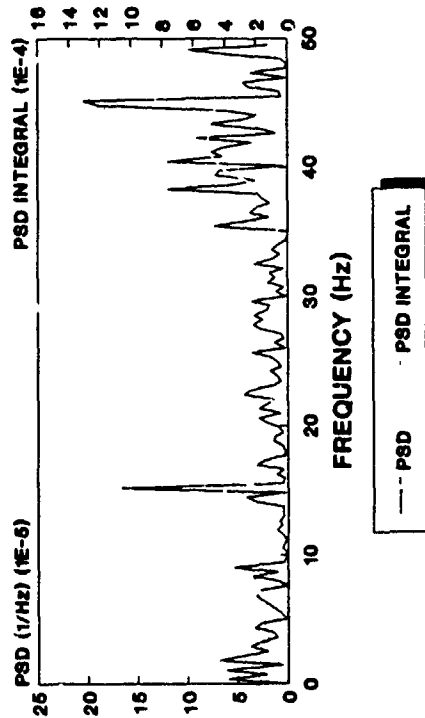
CYLINDER - HT 8.99 - THETA 30 - AZ 160

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



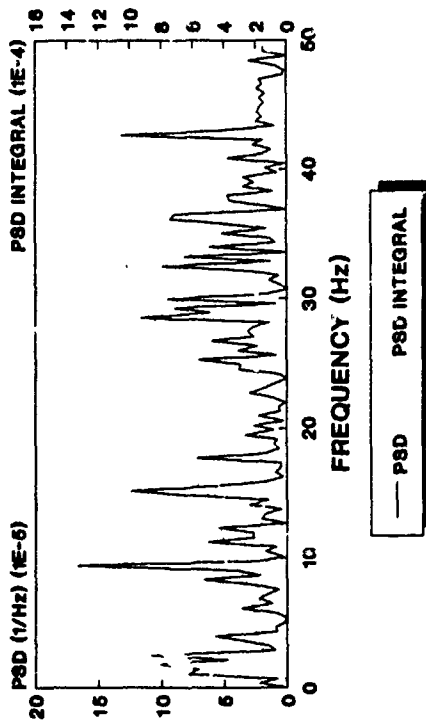
CYLINDER - MT 8.99 - THETA 30 - AZ 160

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



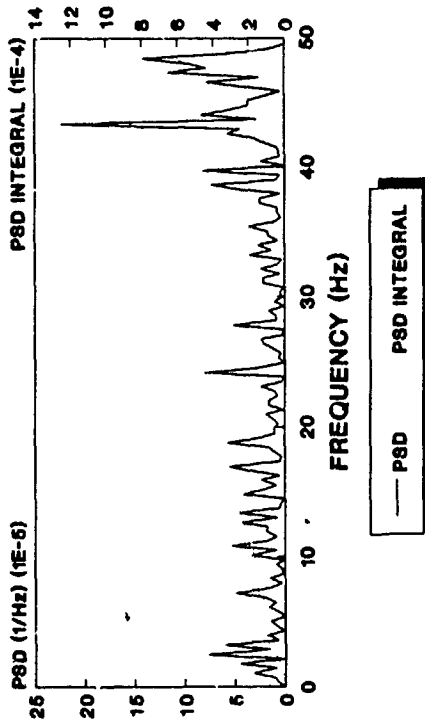
CYLINDER - MT 8.99 - THETA 30 - AZ 160

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



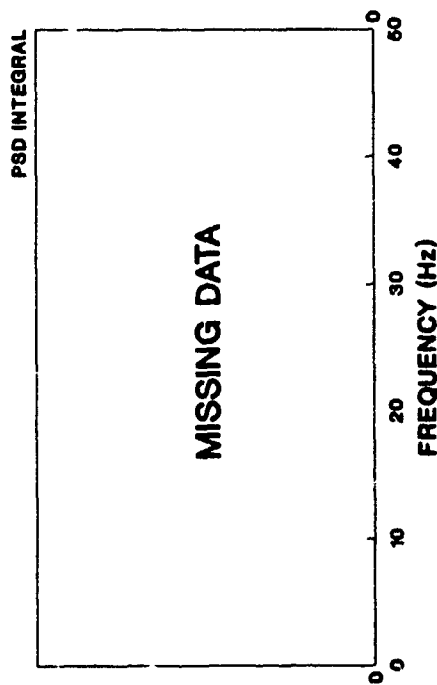
CYLINDER - MT 8.99 - THETA 30 - AZ 160

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



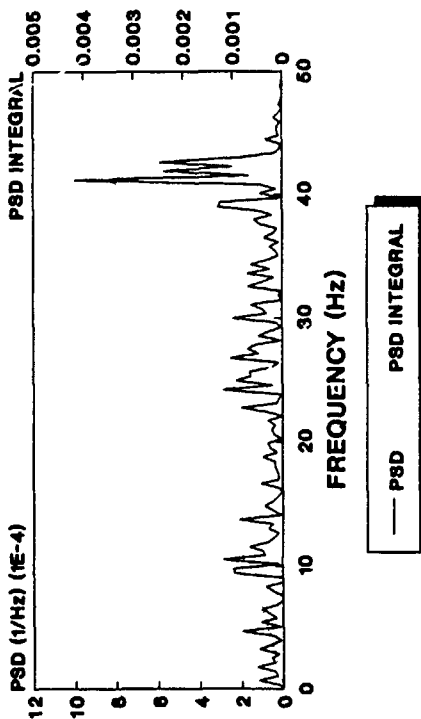
CYLINDER - MT 8.99 - THETA 30 - AZ 160

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



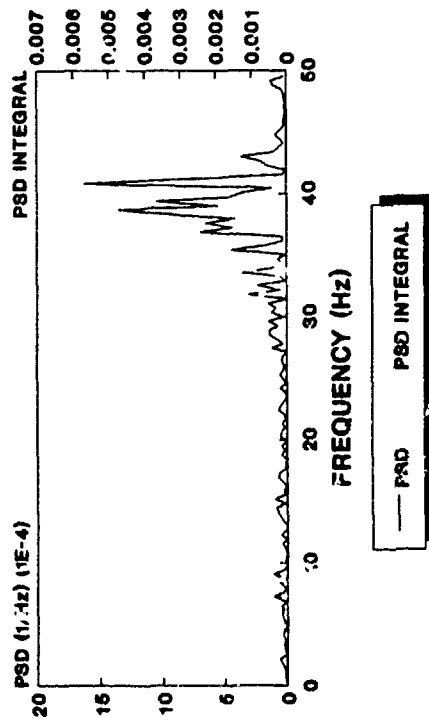
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



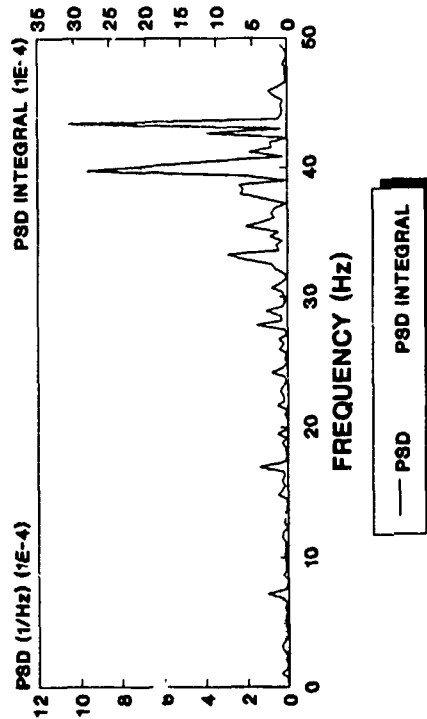
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



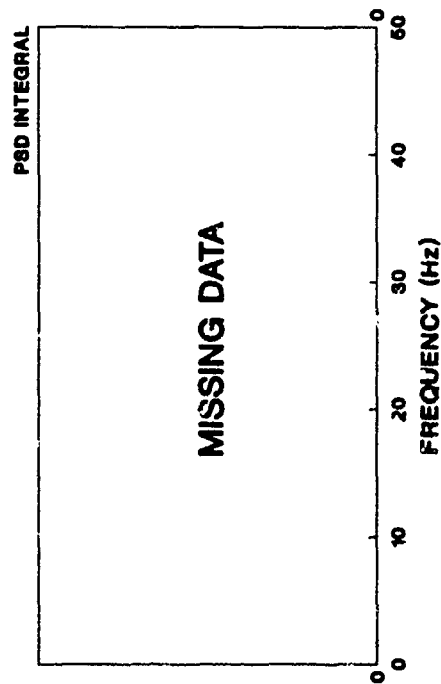
CYLINDER - HT 8.99 - THETA 30 - AZ 160

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



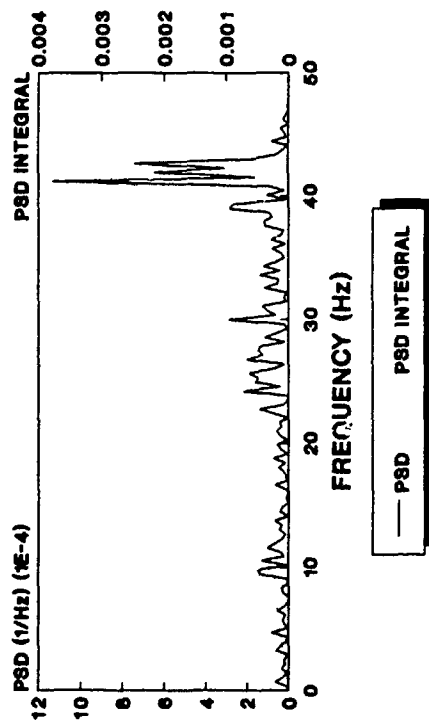
CYLINDER - HT 8.99 - THETA 30 - AZ 160

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



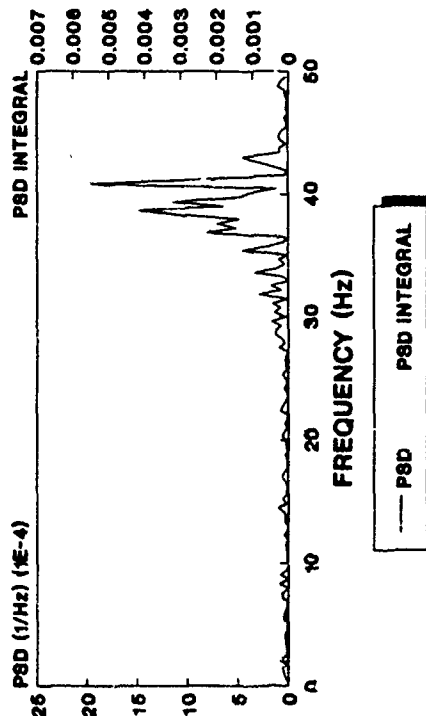
CYLINDER - HT 8.00 - THETA 30 - AZ 160

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



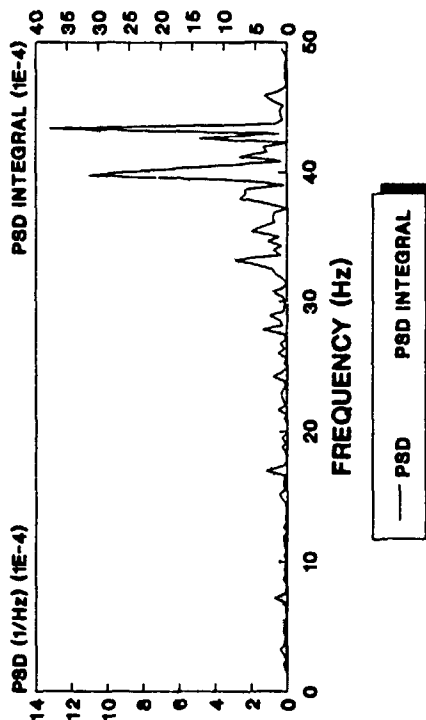
CYLINDER - HT 8.00 - THETA 30 - AZ 160

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



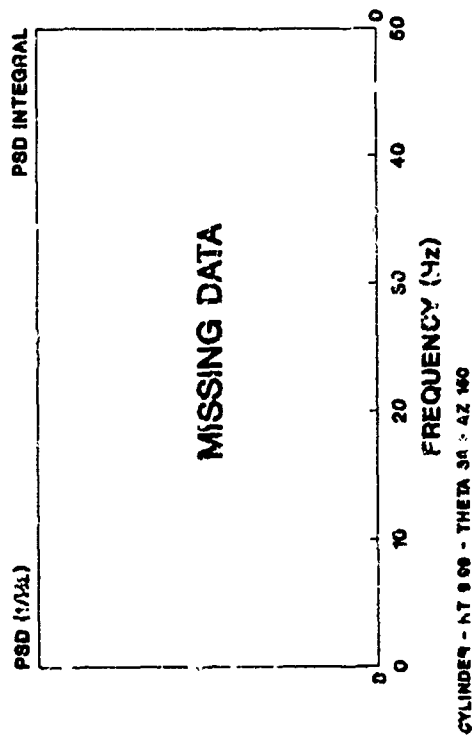
CYLINDER - HT 8.00 - THETA 30 - AZ 160

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**

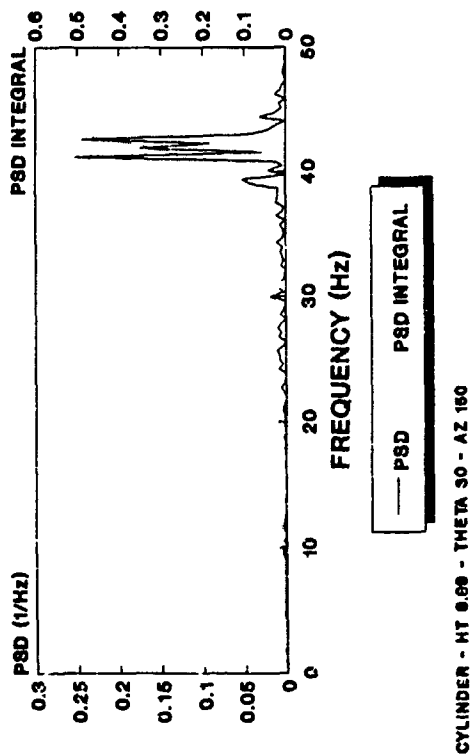


CYLINDER - HT 8.00 - THETA 30 - AZ 160

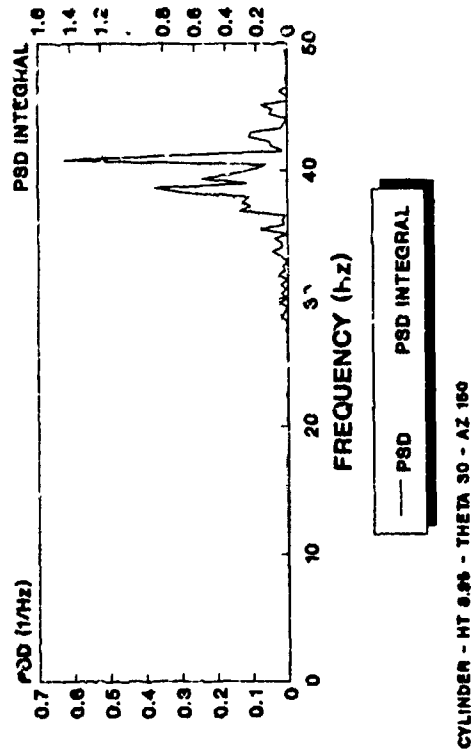
MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



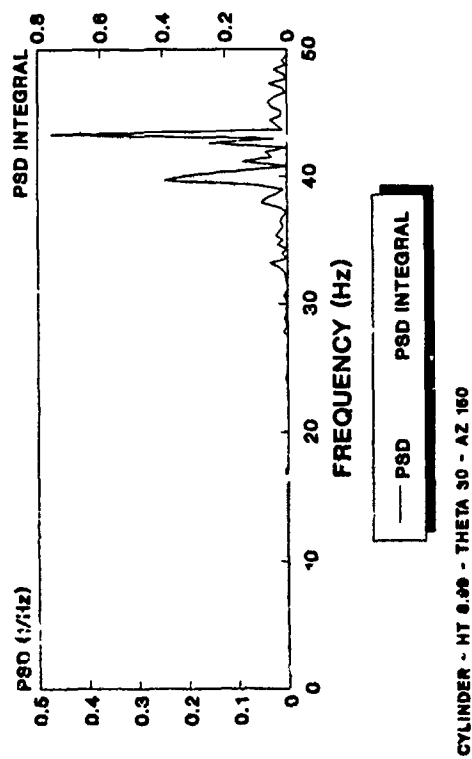
MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



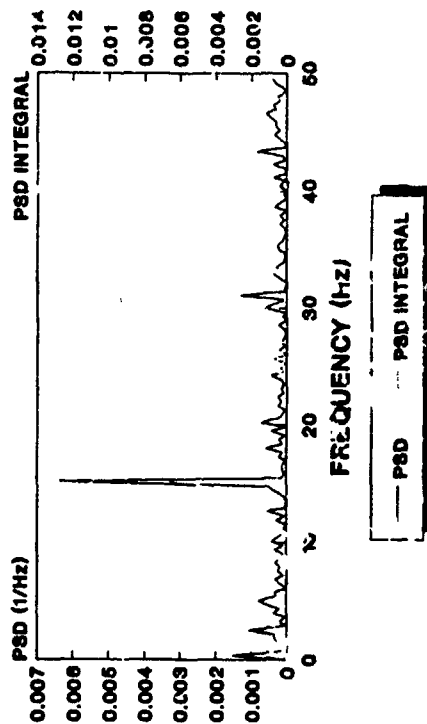
MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**

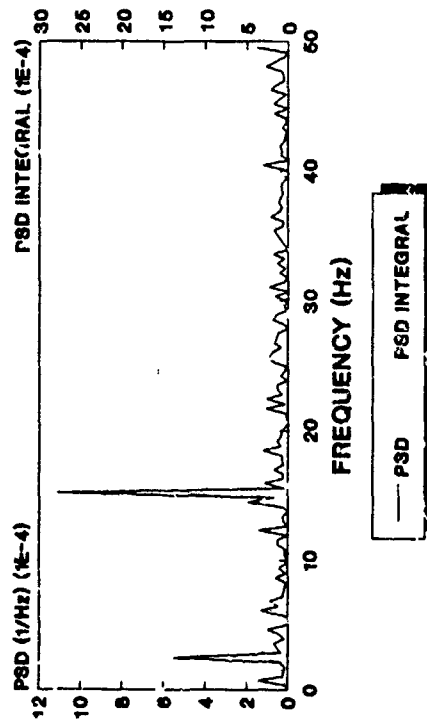


FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



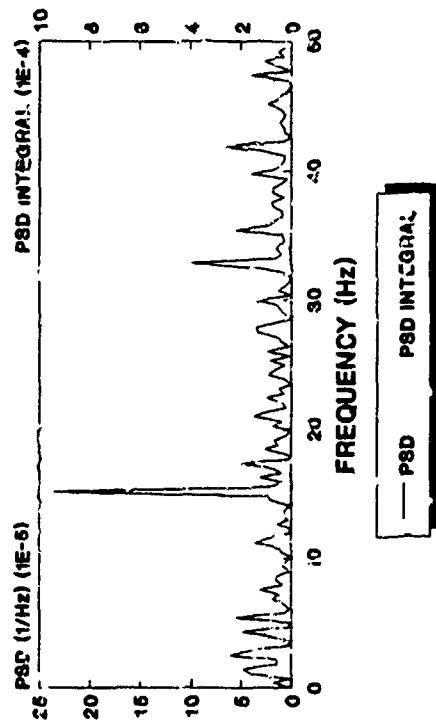
CYLINDER - HT 8.99 - THETA 50 - AZ 180

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



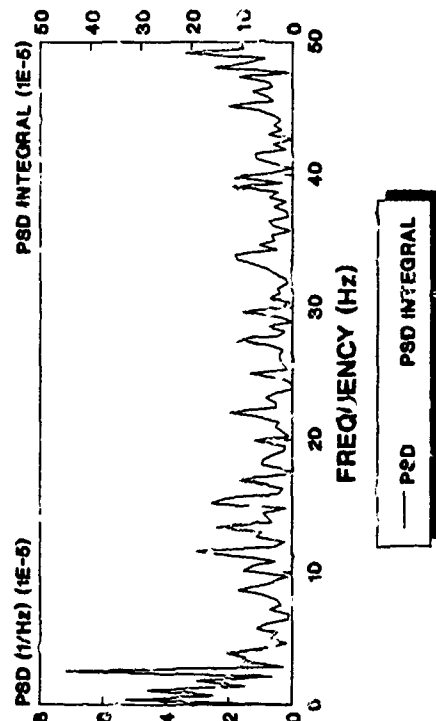
CYLINDER - HT 8.99 - THETA 50 - AZ 180

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



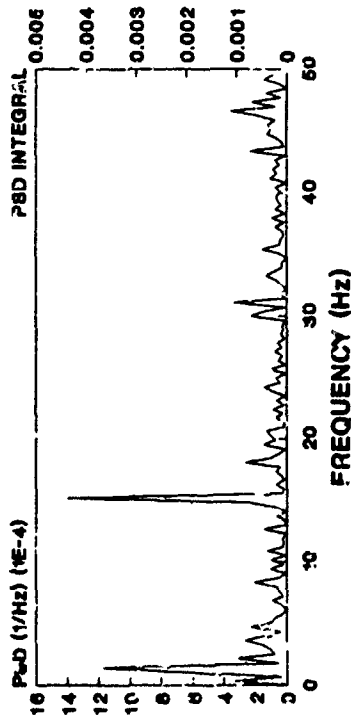
CYLINDER - HT 8.99 - THETA 50 - AZ 180

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 50 - AZ 180

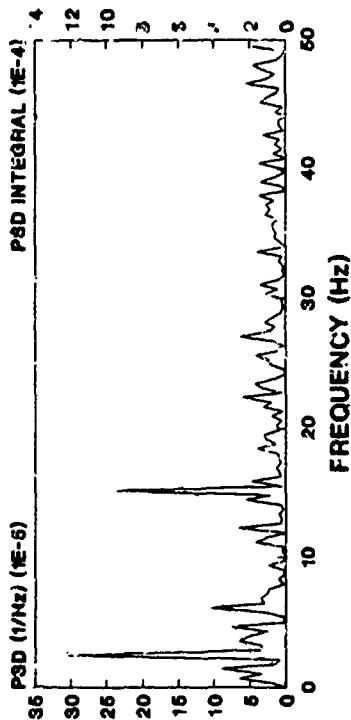
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



--- PSD PSD INTEGRAL

CYLINDER - HT 8.89 - THETA 30 - AZ 180

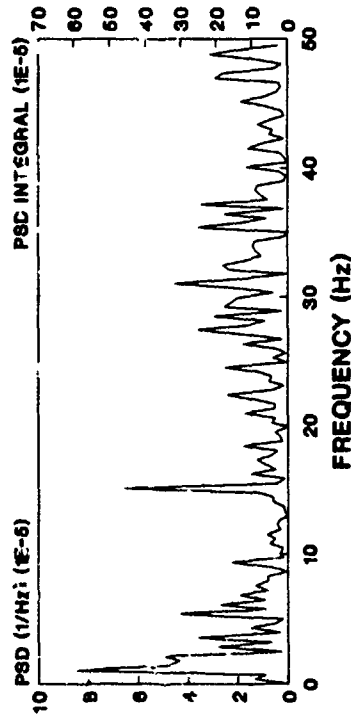
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



--- PSD PSD INTEGRAL

CYLINDER - HT 8.89 - THETA 30 - AZ 180

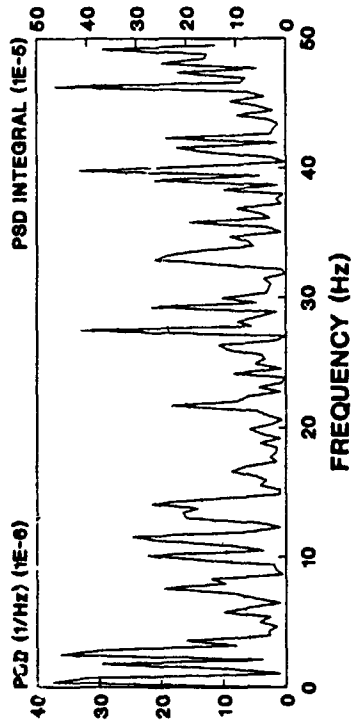
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



--- PSD PSD INTEGRAL

CYLINDER - HT 8.89 - THETA 30 - AZ 180

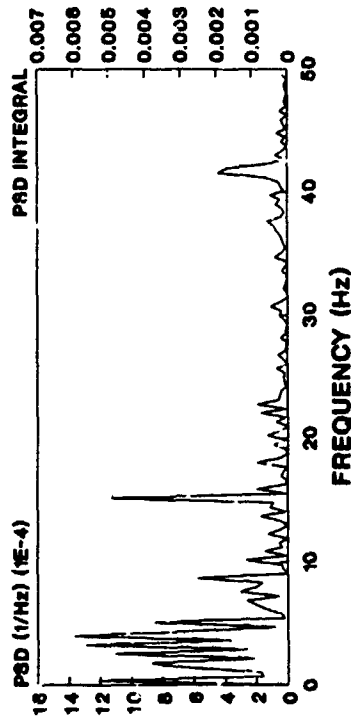
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



--- PSD PSD INTEGRAL

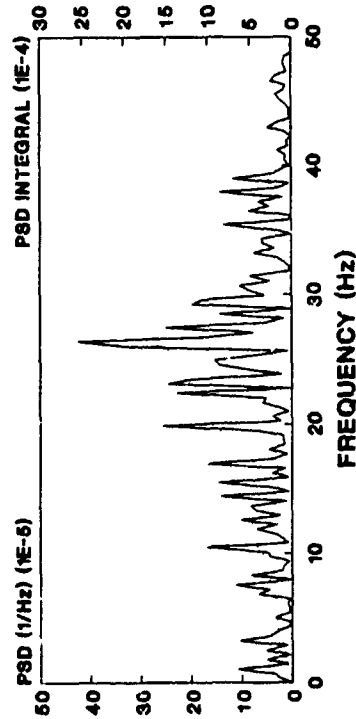
CYLINDER - HT 8.89 - THETA 30 - AZ 180

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



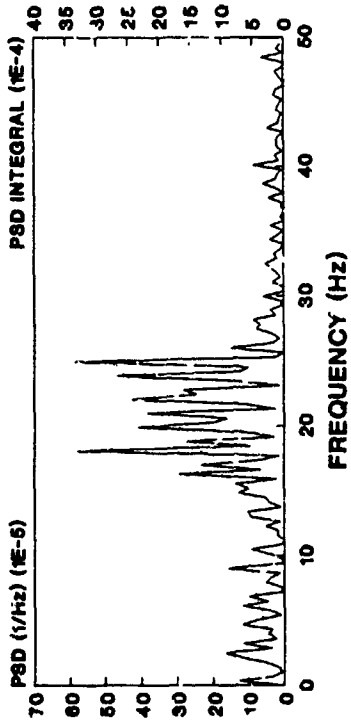
CYLINDER - HT 6.99 - THETA 30 - AZ 180

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



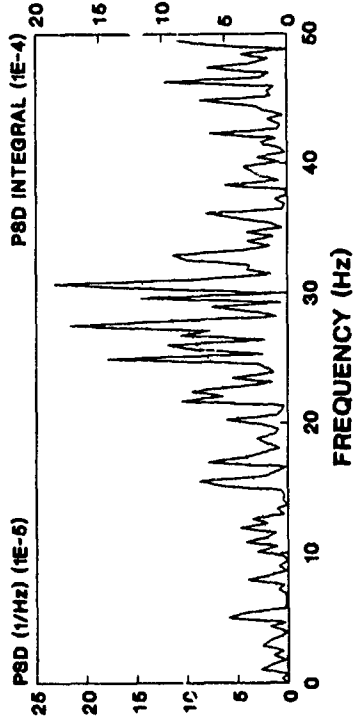
CYLINDER - HT 6.99 - THETA 30 - AZ 180

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



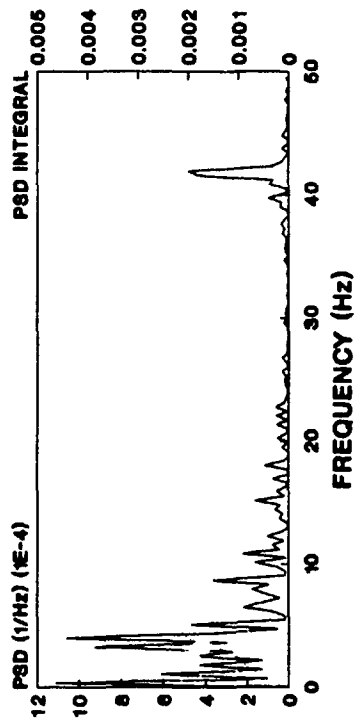
CYLINDER - HT 6.99 - THETA 30 - AZ 180

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



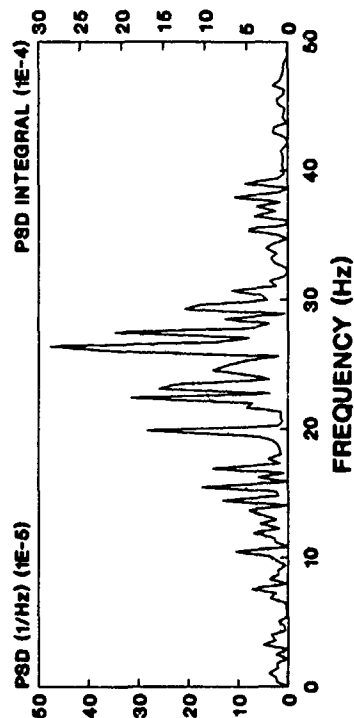
CYLINDER - HT 6.99 - THETA 30 - AZ 180

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



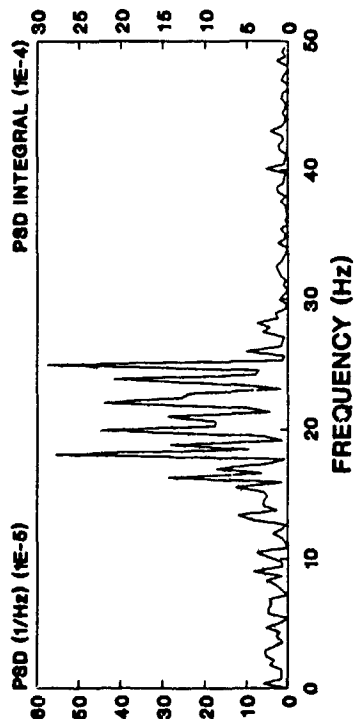
CYLINDER - MT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



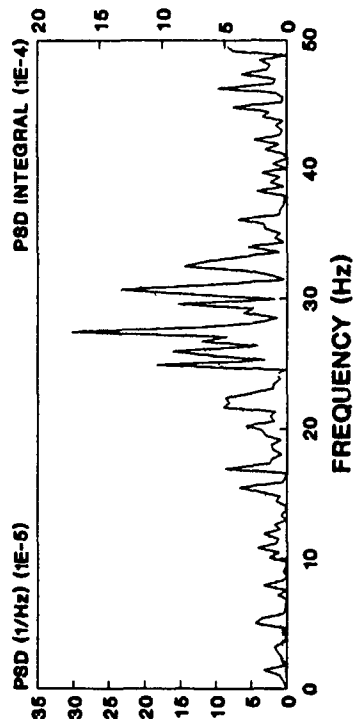
CYLINDER - MT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



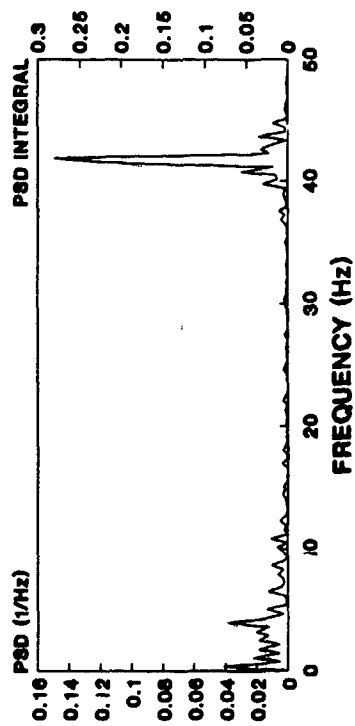
CYLINDER - MT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



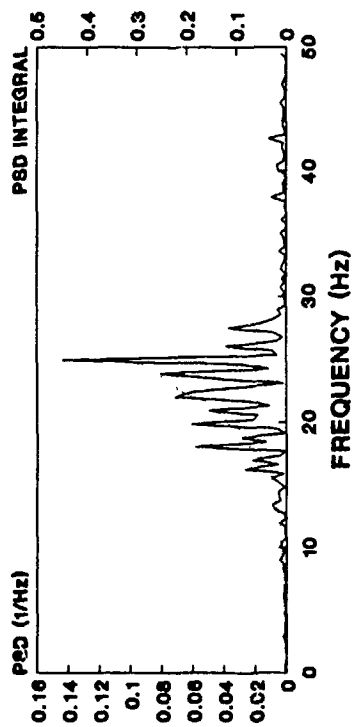
CYLINDER - MT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



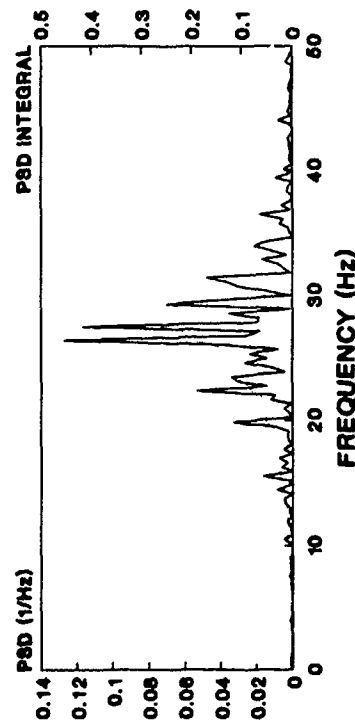
CYLINDER - HT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



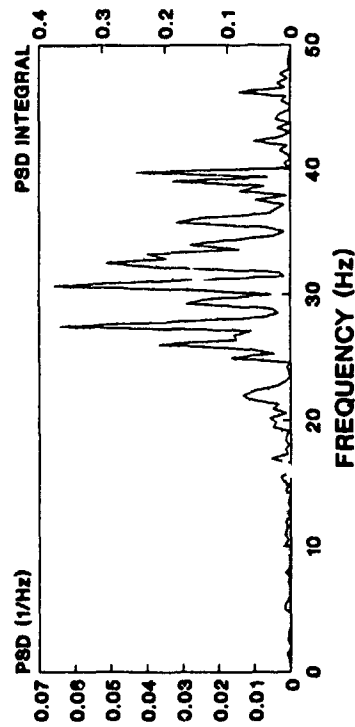
CYLINDER - HT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 30 - AZ 180

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



CYLINDER - HT 8.99 - THETA 30 - AZ 180

DATA REPORT

SHAPE:	CYLINDER
DECLINATION [THETA (degrees)]:	45
DIMENSIONS [LxWxH (in)]:	11.12 x 8.12 x 8.46
WEIGHT (gm):	897.0
TORSION FREQUENCY (Hz):	38
LATERAL (SIDE BEND) FREQUENCY (Hz):	75
NORMAL (AFT BEND) FREQUENCY (Hz):	100
AZIMUTHS (degrees):	0, 30, 45, 60, 90 120, 135, 150, 180

GRAPH CORRECTIONS:

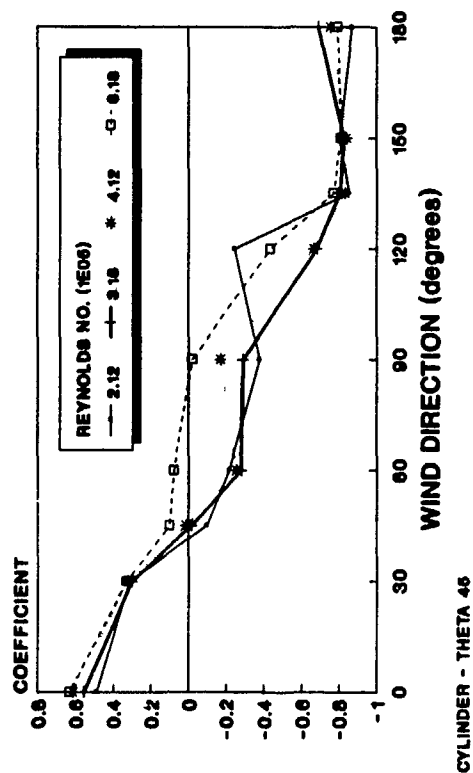
- The mean value of the **ROLL** moment coefficients should be divided by 12.
- The PSD and FSD Integral values of the **ROLL** moment coefficients should be divided by 144.

OBSERVATIONS:

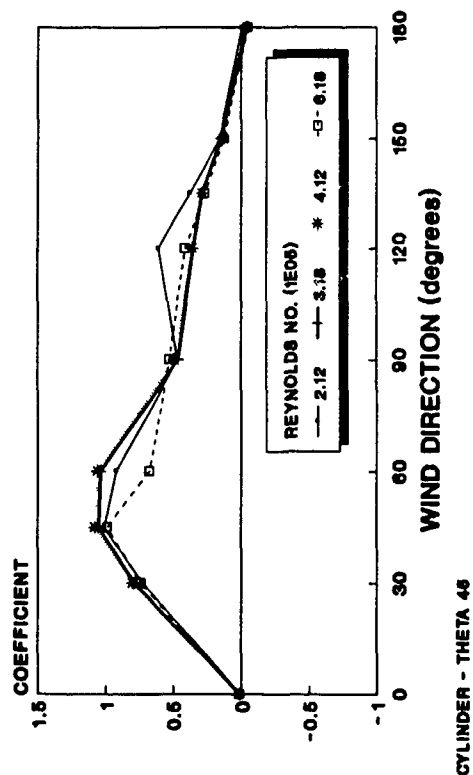
- Single frequency shedding signature not observed.
- A very good multifrequency shed can be seen in the lateral data at an azimuth of 180 degrees.
- A poor shed is seen in the roll data at an azimuth of 0 degrees.
- Shedding frequencies are different in the 0 degree and 180 degree data.

- Much of the data shows spikes near the torsional frequency of 38 Hz. For a good example see the lateral and roll data at azimuth 90 degrees.
- The 15.176 Hz spike is seen occasionally in the data.

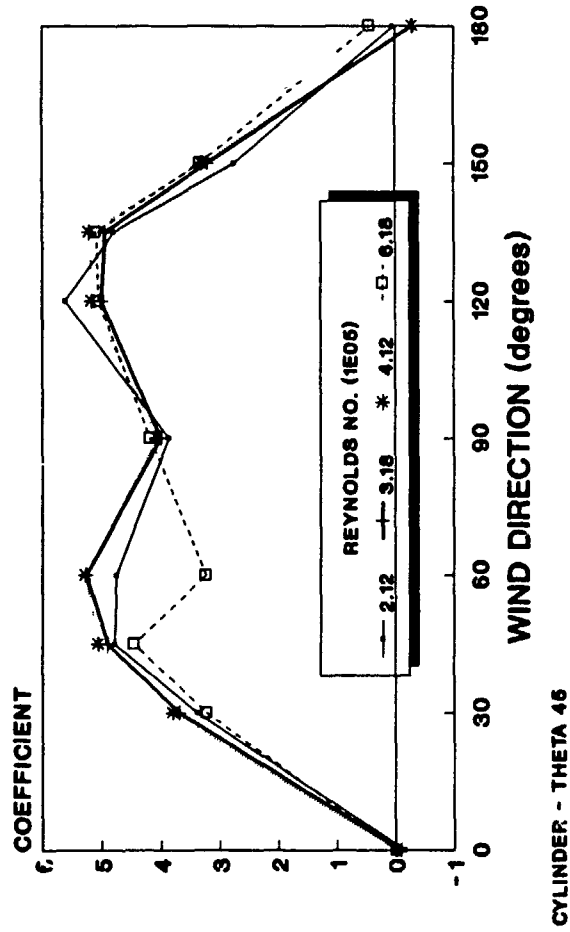
MEAN FORCE COEFFICIENT NORMAL DIRECTION



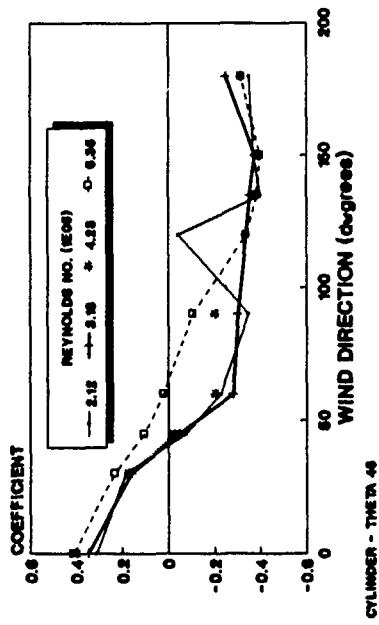
MEAN FORCE COEFFICIENT LATERAL DIRECTION



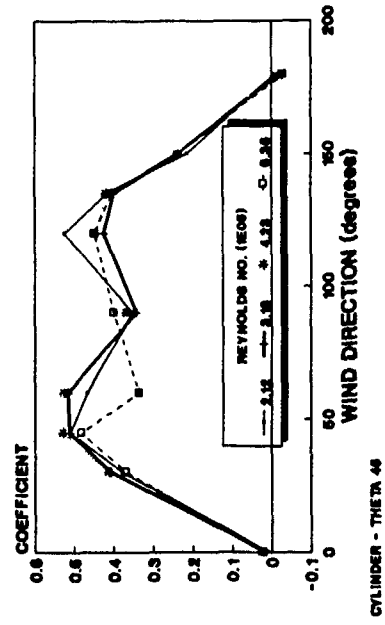
MEAN MOMENT COEFFICIENT ROLL DIRECTION



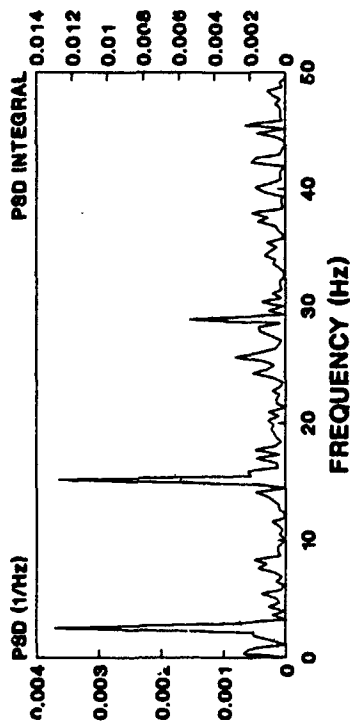
MEAN MOMENT COEFFICIENT NORMAL DIRECTION



MEAN MOMENT COEFFICIENT LATERAL DIRECTION



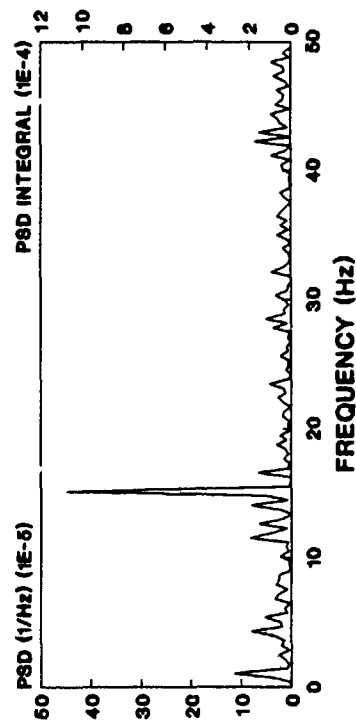
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

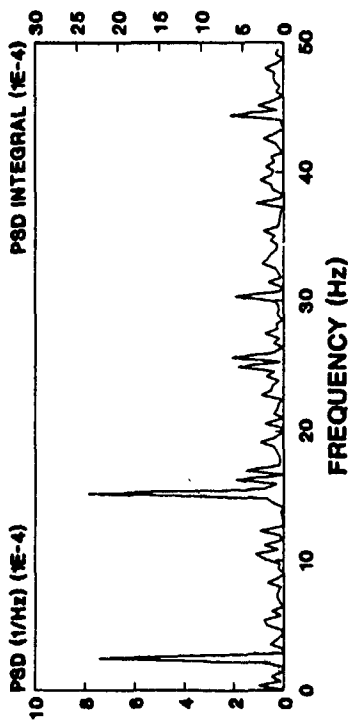
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

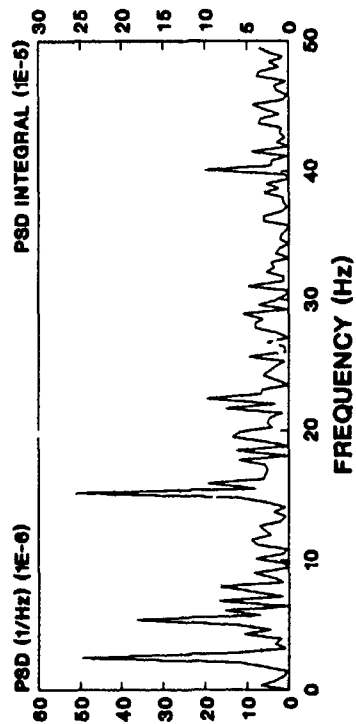
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

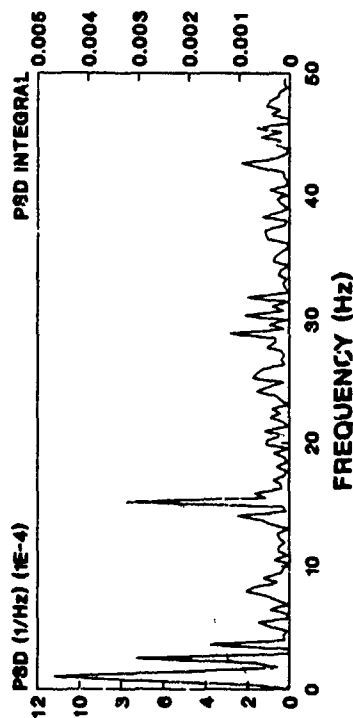
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD PSD INTEGRAL

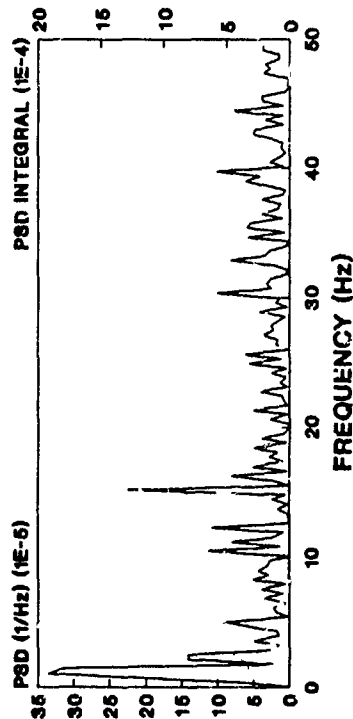
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



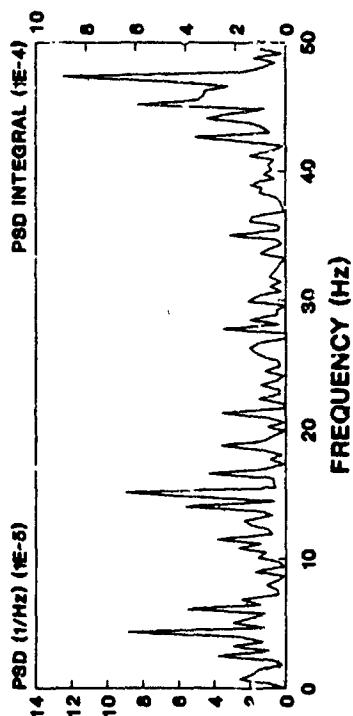
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



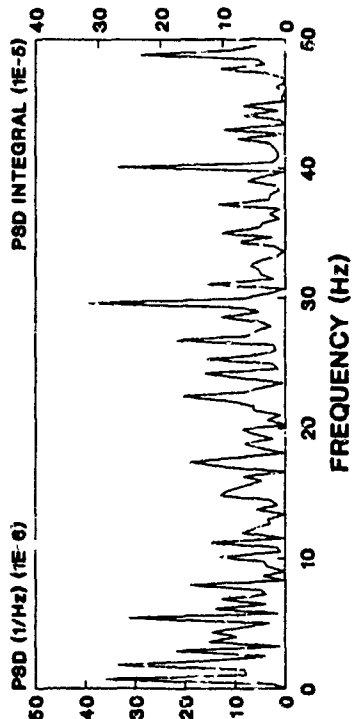
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



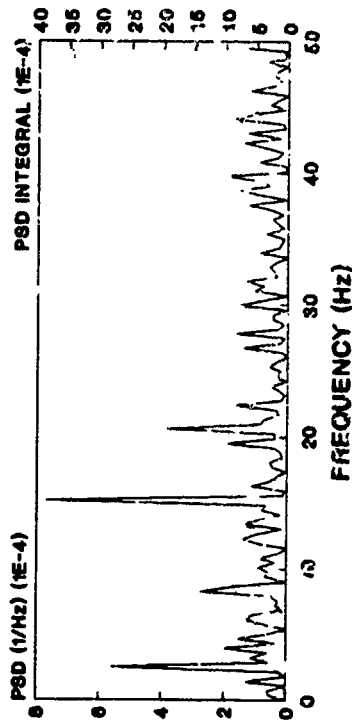
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



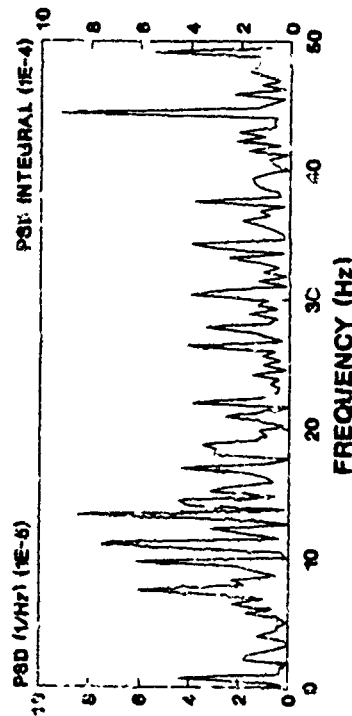
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



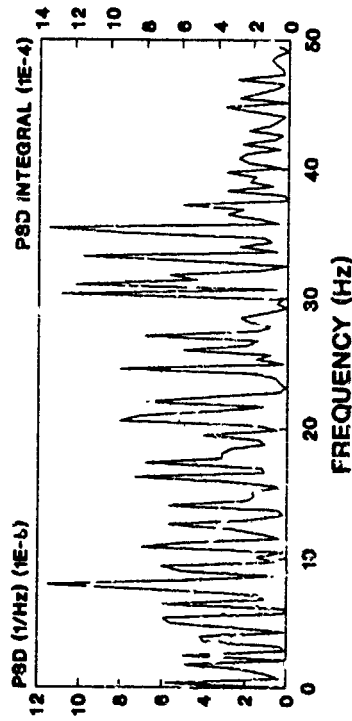
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



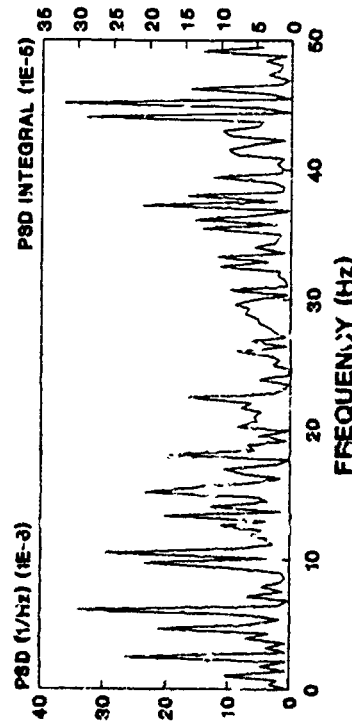
CYLINDER - HT 8.43 - THETA 45 - AZ 000

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



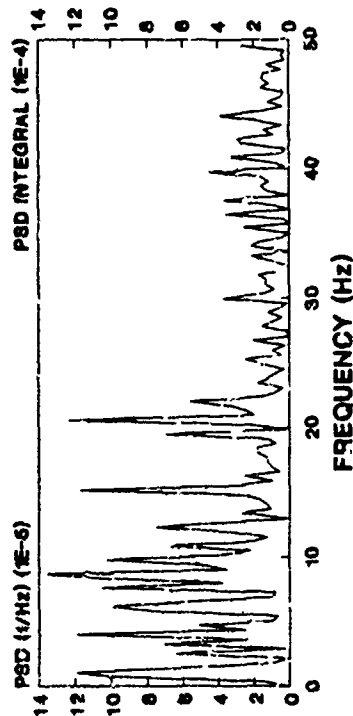
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



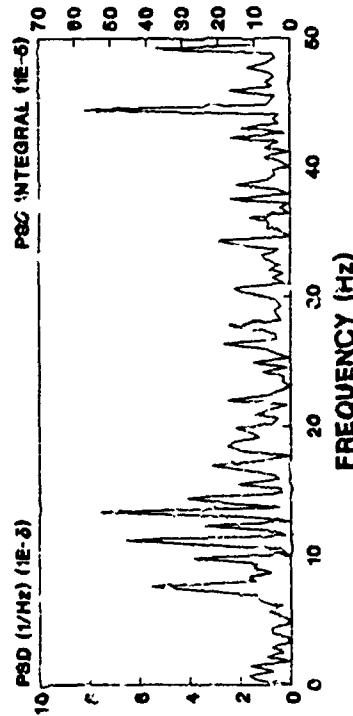
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



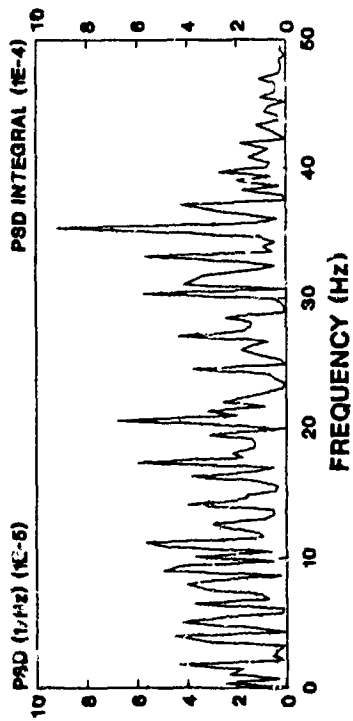
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



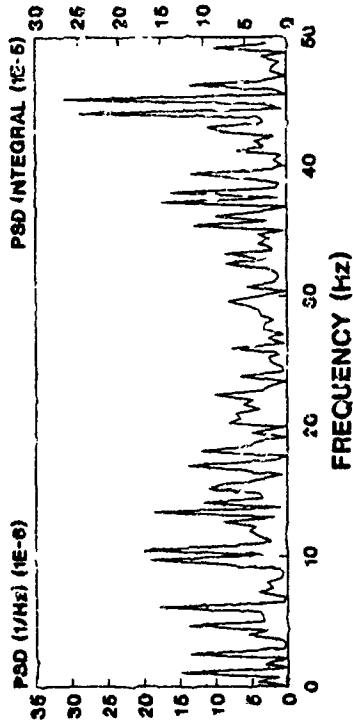
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



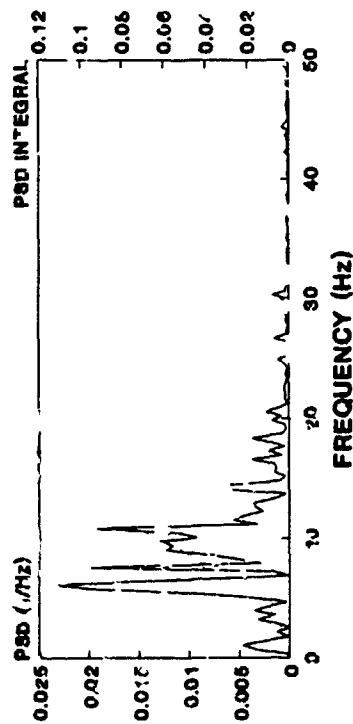
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



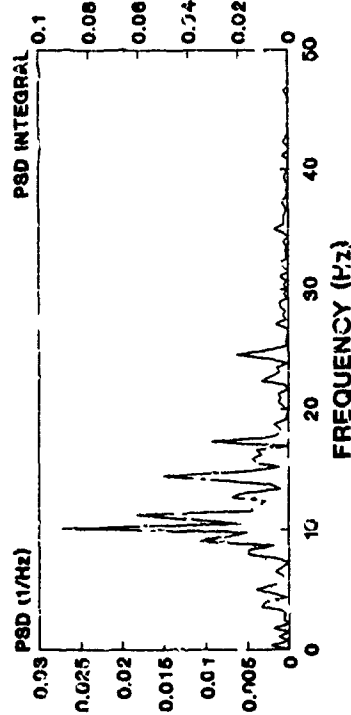
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



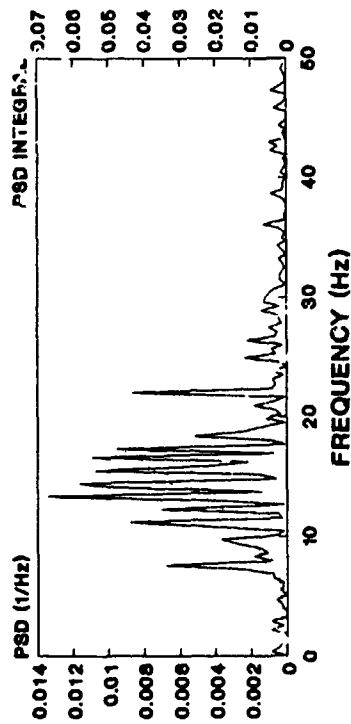
CYLINDER - HT 9.48 - THETA 45 - AZ 000

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



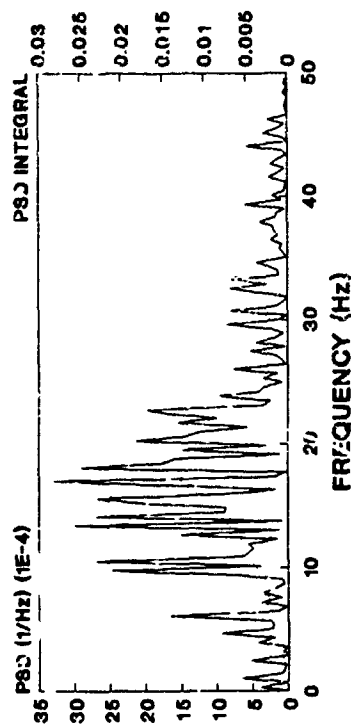
CYLINDER - HT 9.48 - THETA 45 - AZ 000

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



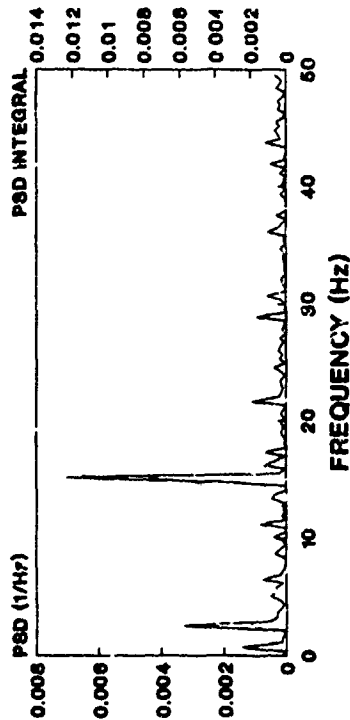
CYLINDER - HT 9.48 - THETA 45 - AZ 000

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



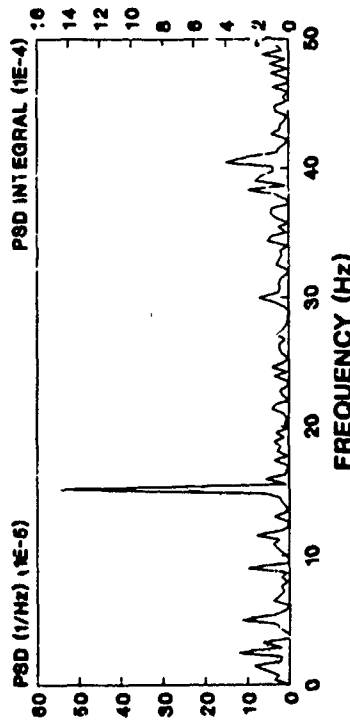
CYLINDER - HT 9.48 - THETA 45 - AZ 000

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



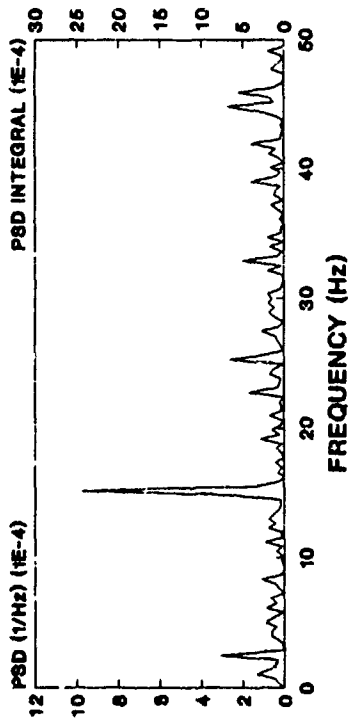
CYLINDER - MT 8.48 - THETA 45 - AZ 030

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



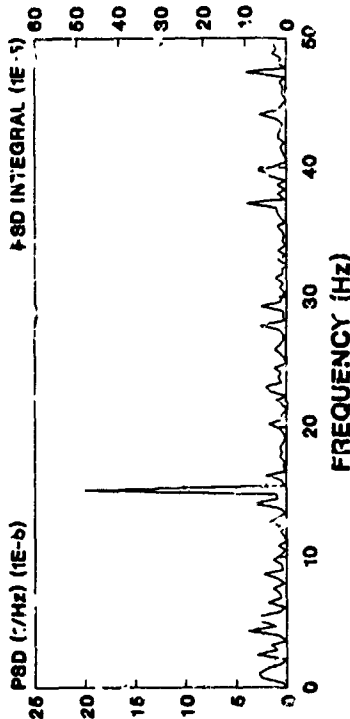
CYLINDER - MT 8.48 - THETA 45 - AZ 030

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



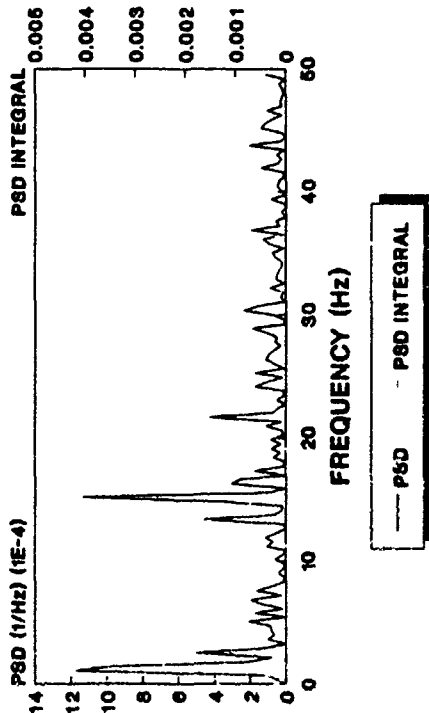
CYLINDER - MT 8.48 - THETA 45 - AZ 030

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



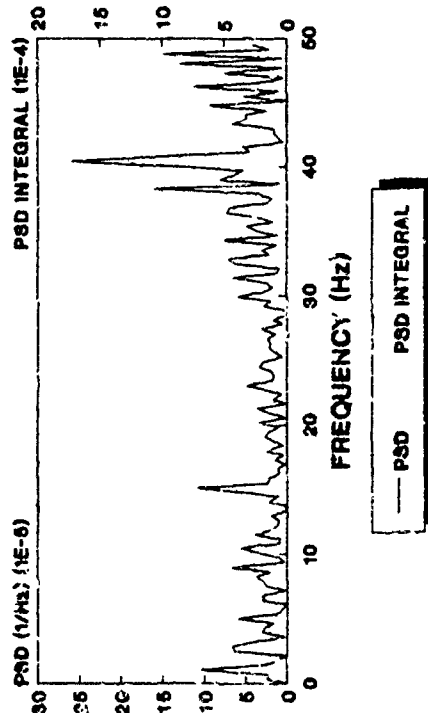
CYLINDER - MT 8.48 - THETA 45 - AZ 030

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



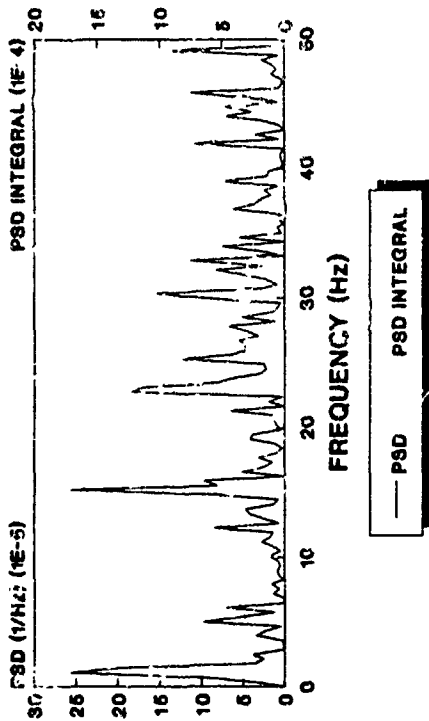
CYLINDER - HT 8.48 - THETA 45 - AZ 030

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



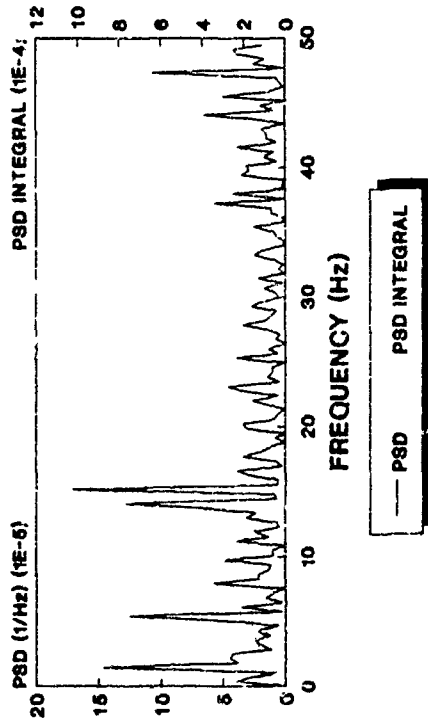
CYLINDER - HT 8.48 - THETA 45 - AZ 030

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



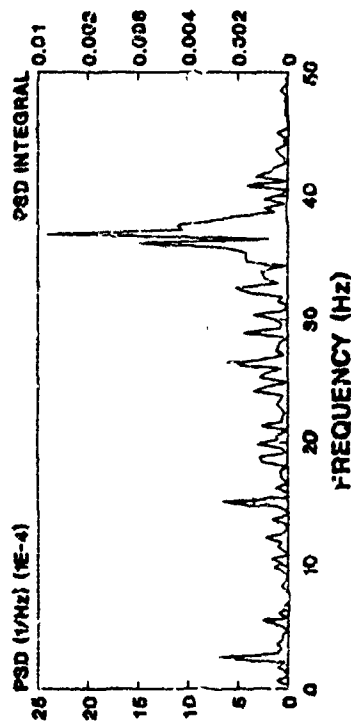
CYLINDER - HT 8.48 - THETA 45 - AZ 030

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 45 - AZ 030

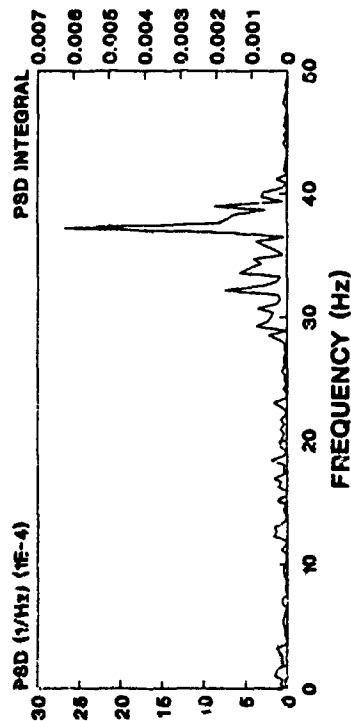
FORCE COEFF - LATERAL 50 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

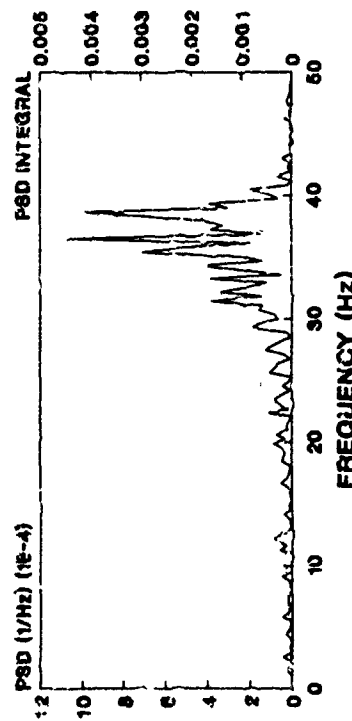
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

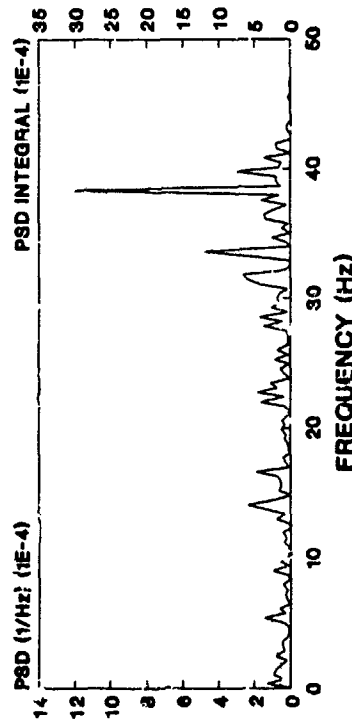
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

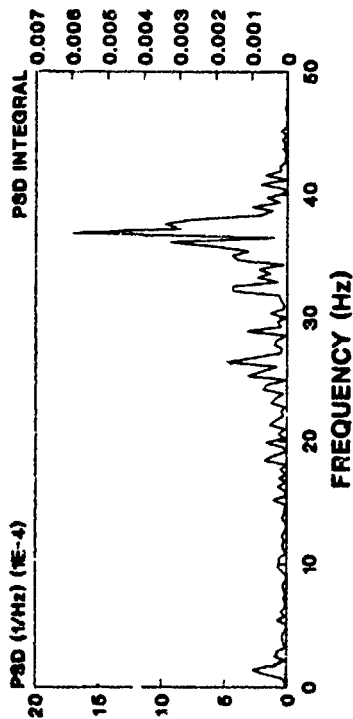
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

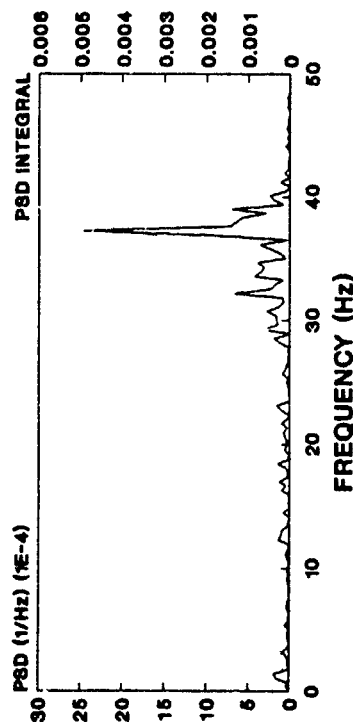
CYLINDER - HT 8.48 - THETA 45 - AZ 030

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



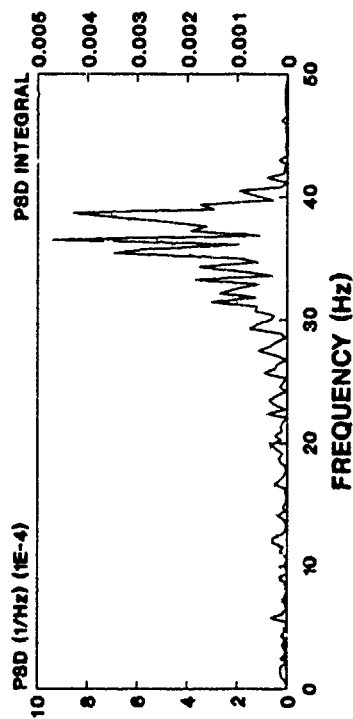
CYLINDER - HT 8.46 - THETA 45 - AZ 030

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



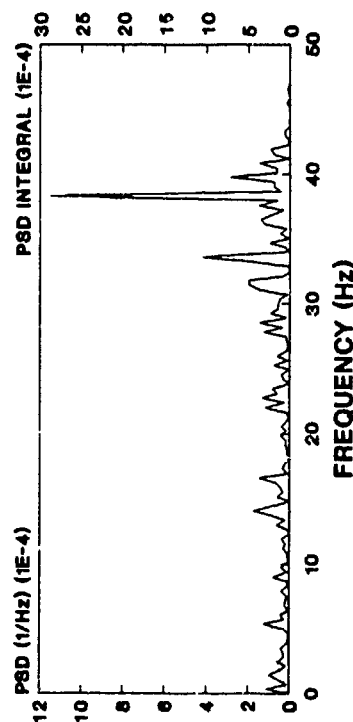
CYLINDER - HT 8.46 - THETA 45 - AZ 030

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



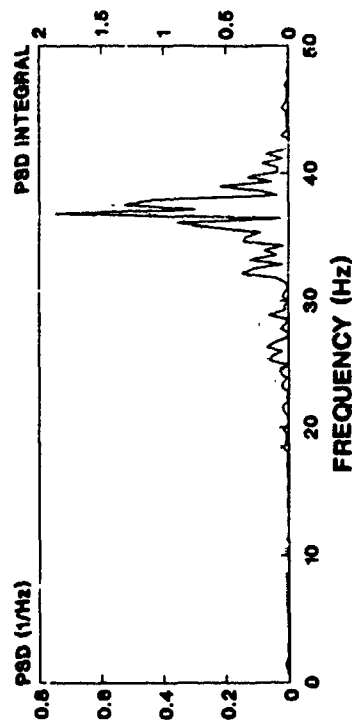
CYLINDER - HT 8.46 - THETA 45 - AZ 030

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.46 - THETA 45 - AZ 030

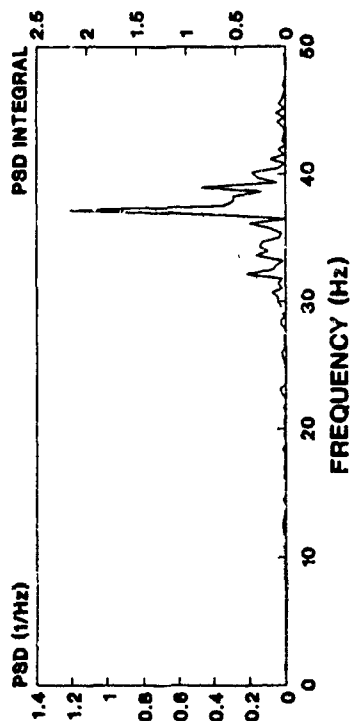
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

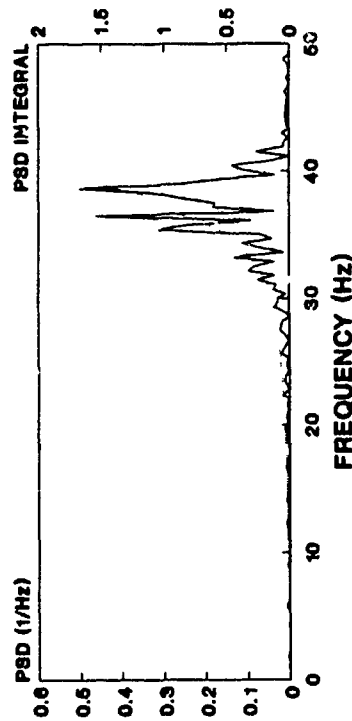
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

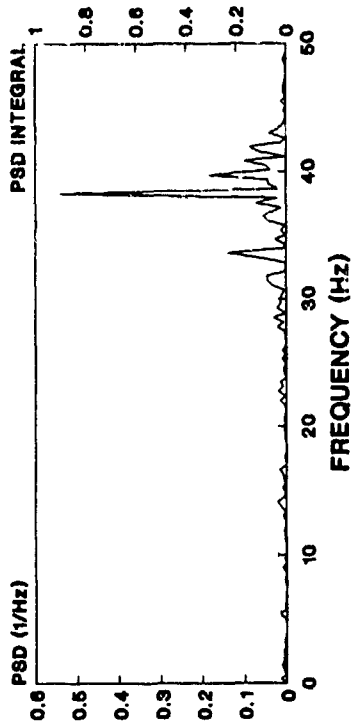
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 030

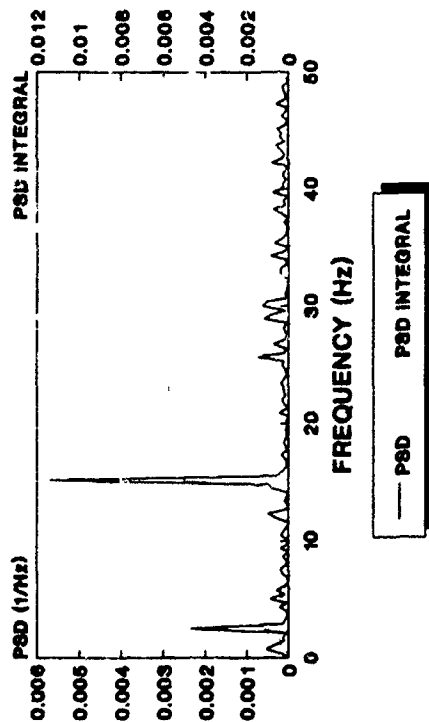
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

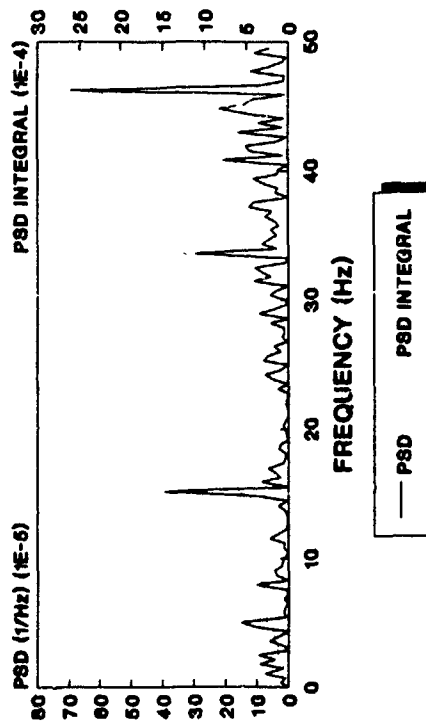
CYLINDER - HT 8.48 - THETA 45 - AZ 030

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



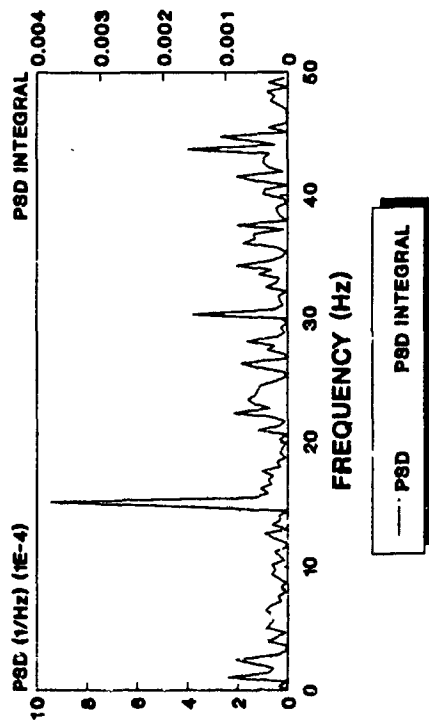
CYLINDER - HT 8.48 - THETA 45 - AZ 046

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



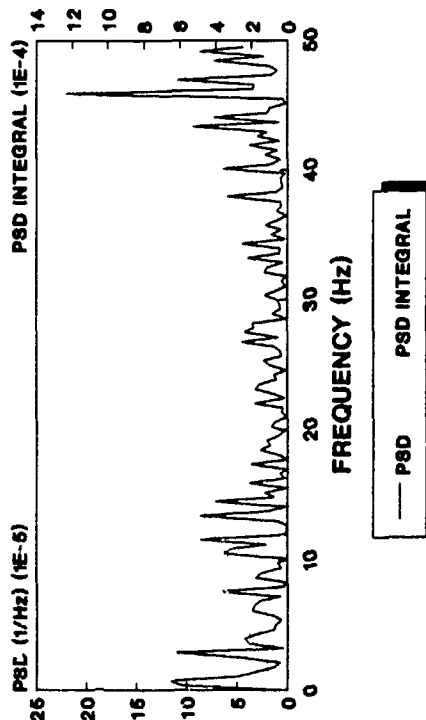
CYLINDER - HT 8.48 - THETA 45 - AZ 046

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



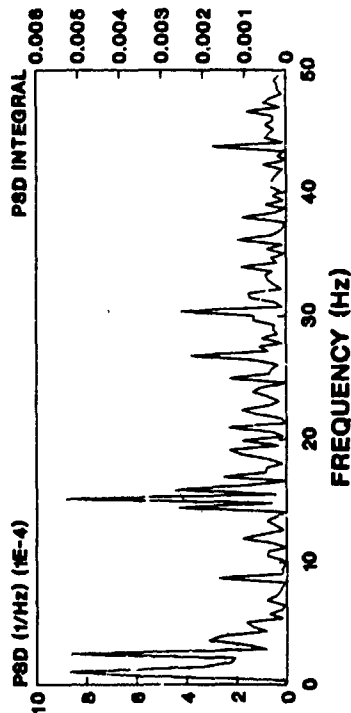
CYLINDER - HT 8.48 - THETA 45 - AZ 046

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



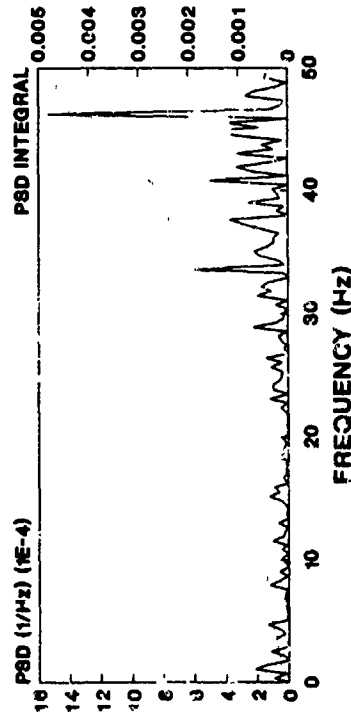
CYLINDER - HT 8.48 - THETA 45 - AZ 046

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



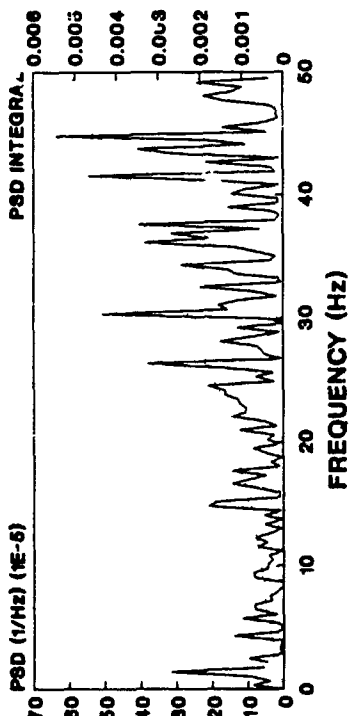
CYLINDER - MT 8.48 - THETA 45 - AZ 046

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



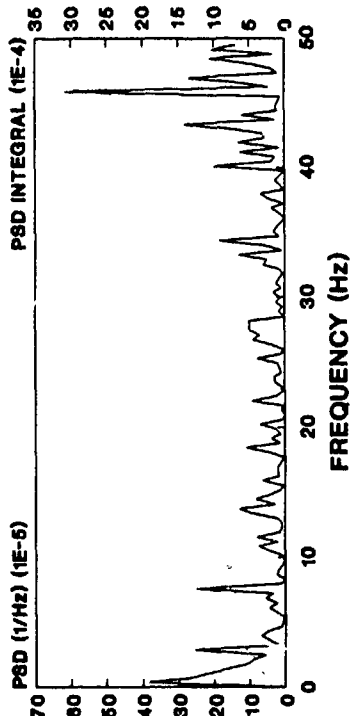
CYLINDER - MT 8.48 - THETA 45 - AZ 043

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



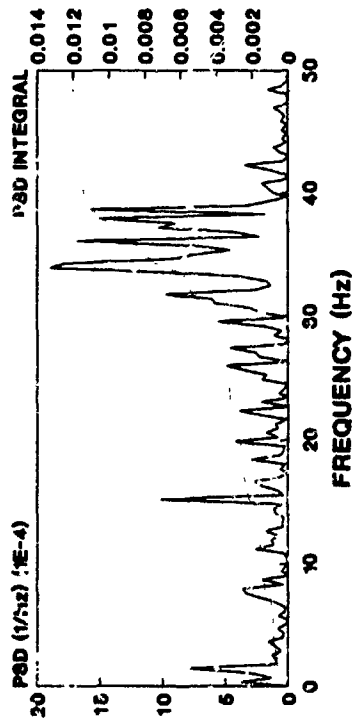
CYLINDER - MT 8.48 - THETA 45 - AZ 046

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



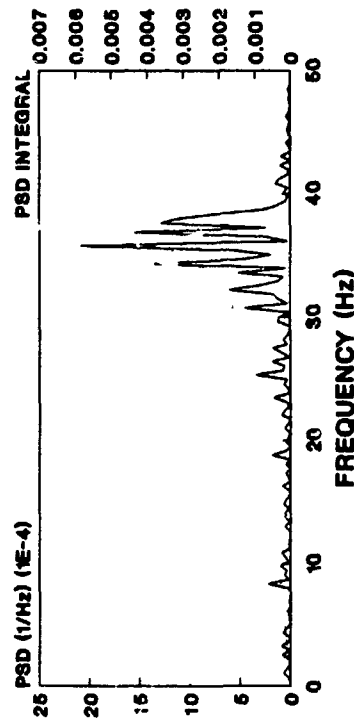
CYLINDER - MT 8.48 - THETA 45 - AZ 046

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



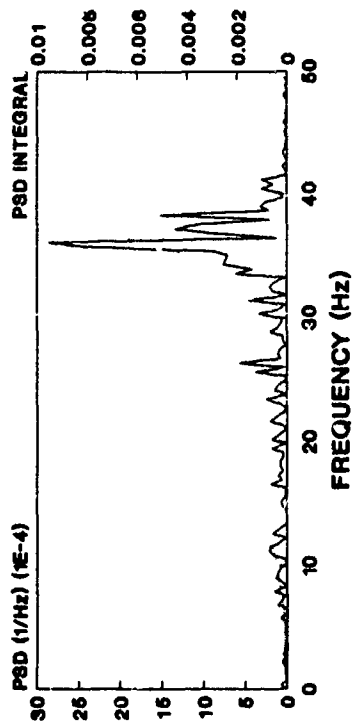
CYLINDER - HT 8.48 - THETA 45 - AZ 045

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



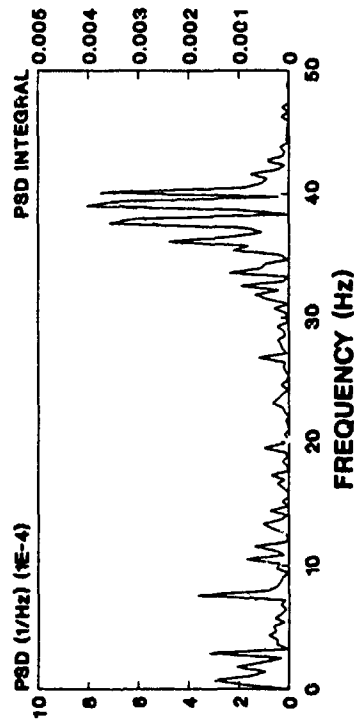
CYLINDER - HT 8.48 - THETA 45 - AZ 045

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



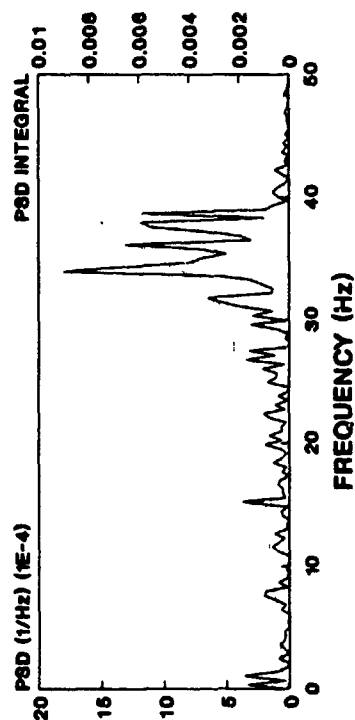
CYLINDER - HT 8.48 - THETA 45 - AZ 045

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.48 - THETA 45 - AZ 045

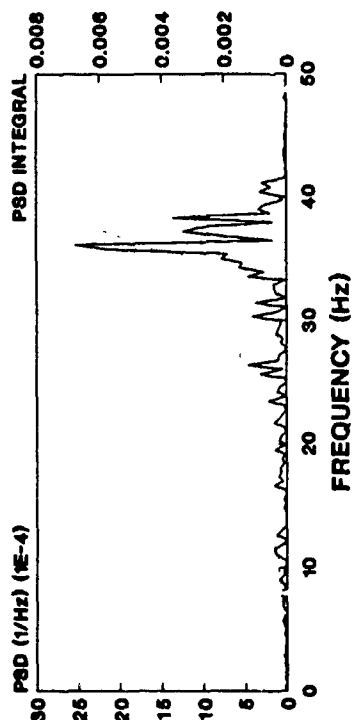
MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 045

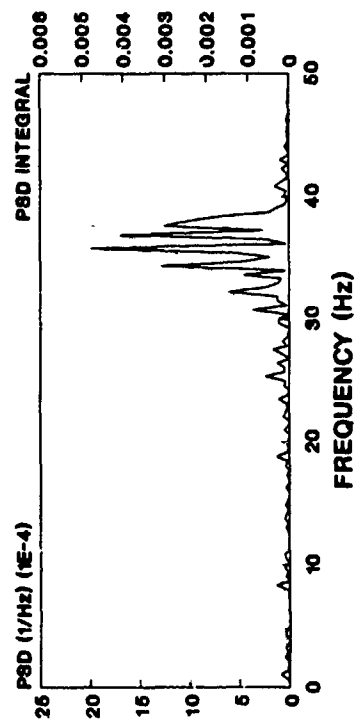
MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 045

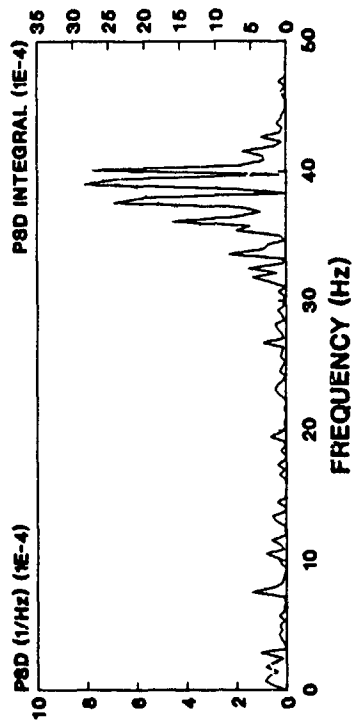
MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 045

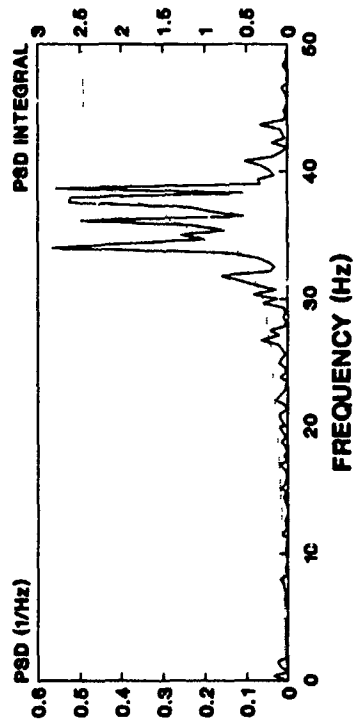
MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 045

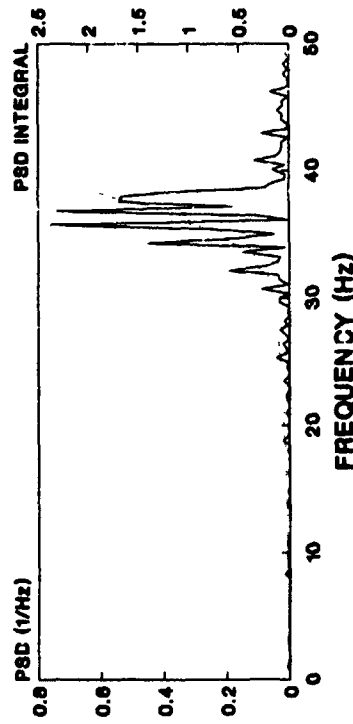
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 045

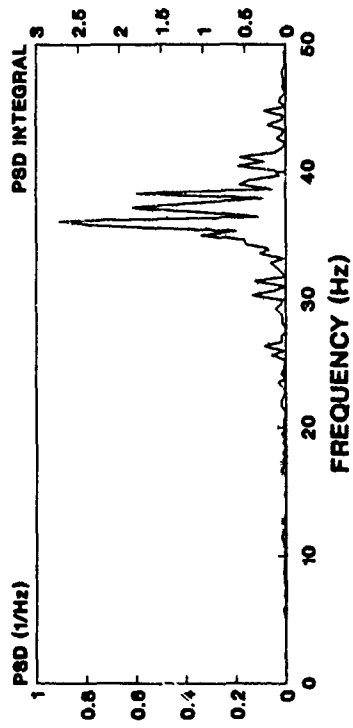
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 045

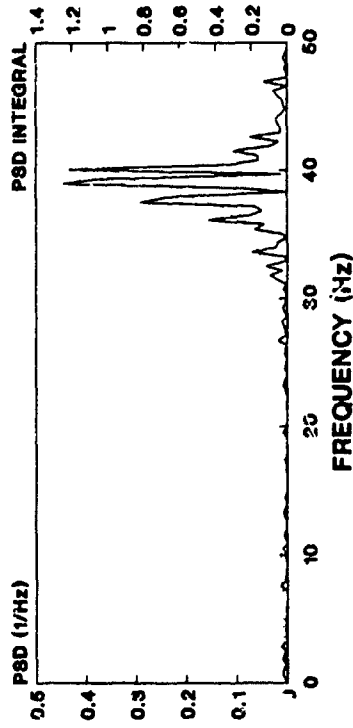
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 045

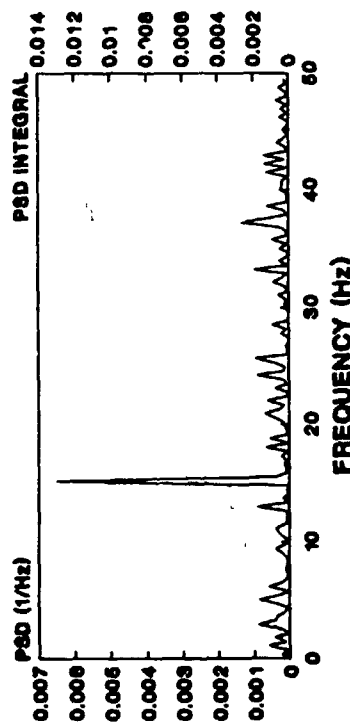
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

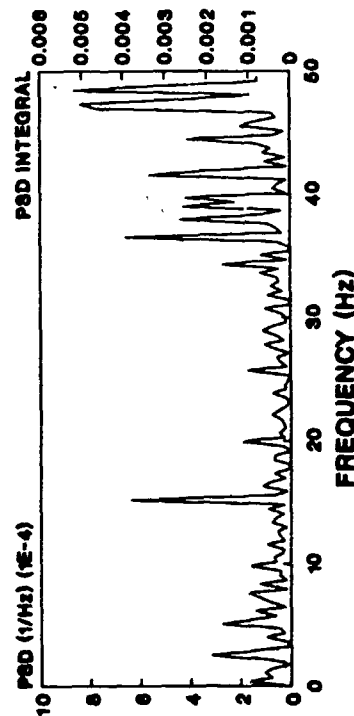
CYLINDER - HT 8.46 - THETA 45 - AZ 045

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



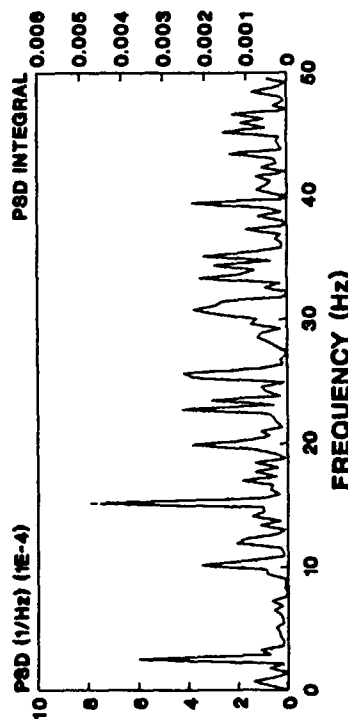
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



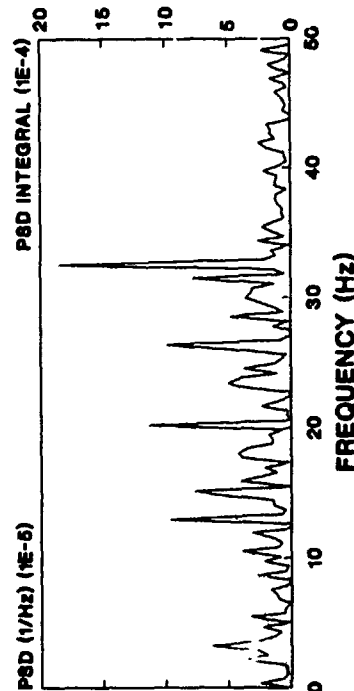
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



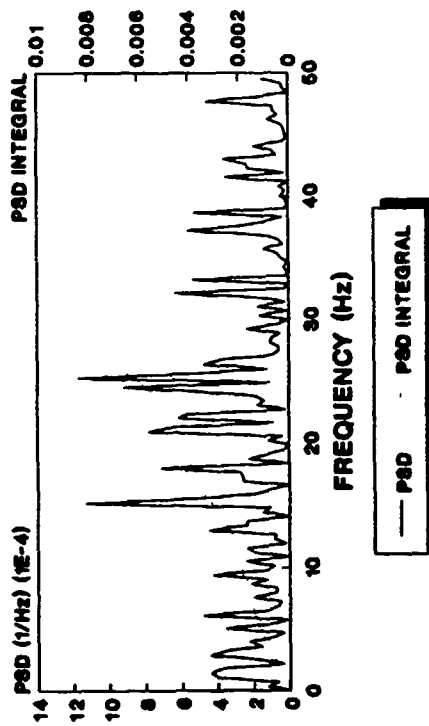
CYLINDER - HT 8.48 - THETA 45 - AZ 000

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



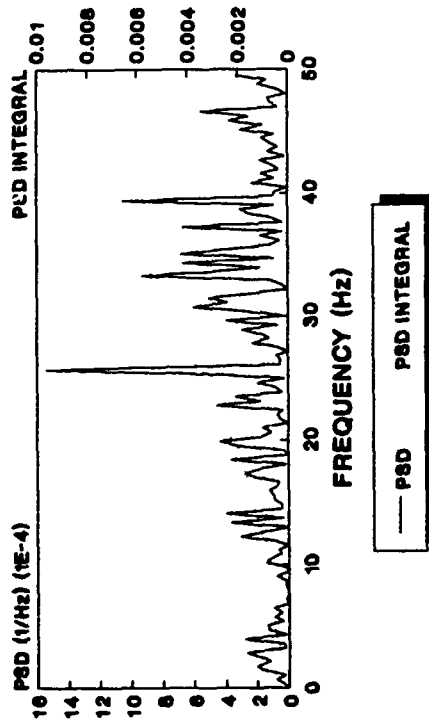
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



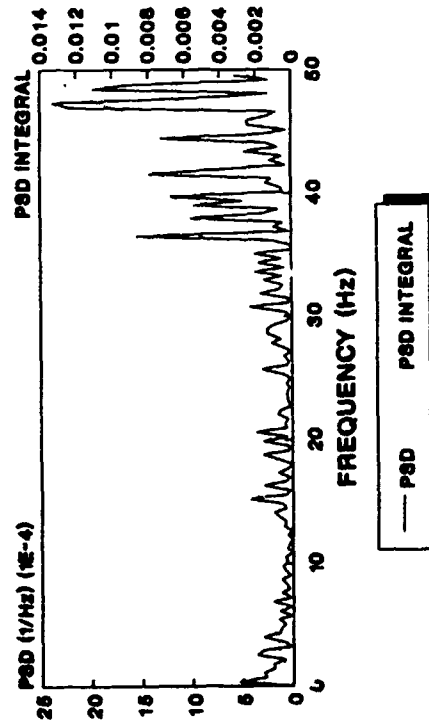
CYLINDER - MT 8.48 - THETA 45 - AZ 060

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



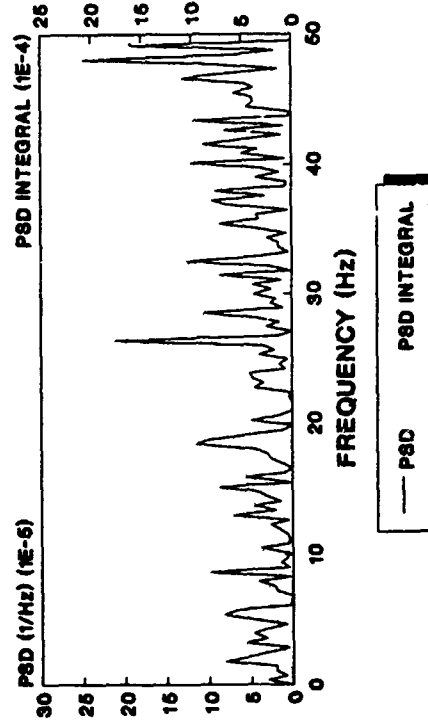
CYLINDER - MT 8.48 - THETA 45 - AZ 060

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



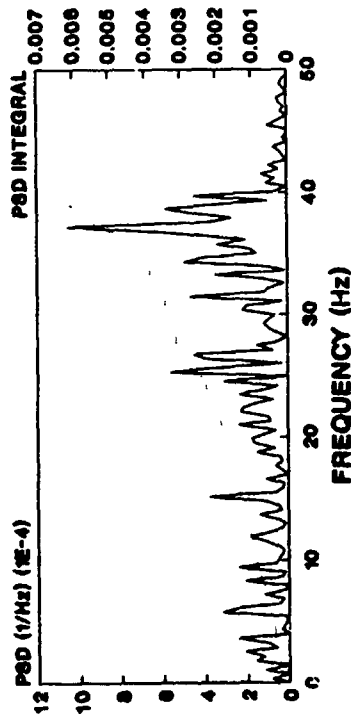
CYLINDER - MT 8.48 - THETA 45 - AZ 060

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - MT 8.48 - THETA 45 - AZ 060

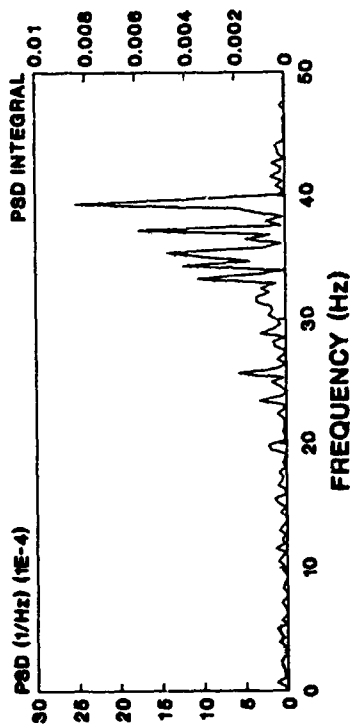
FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

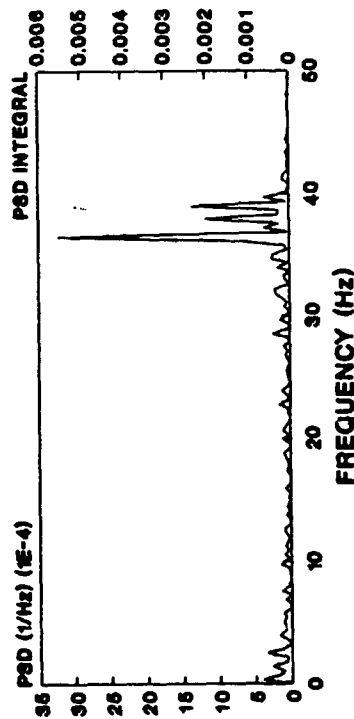
FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

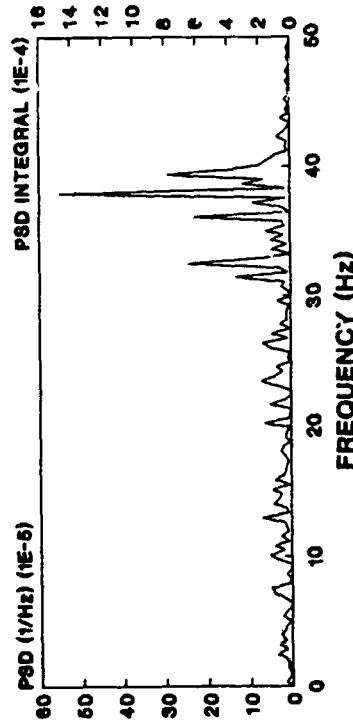
FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 000

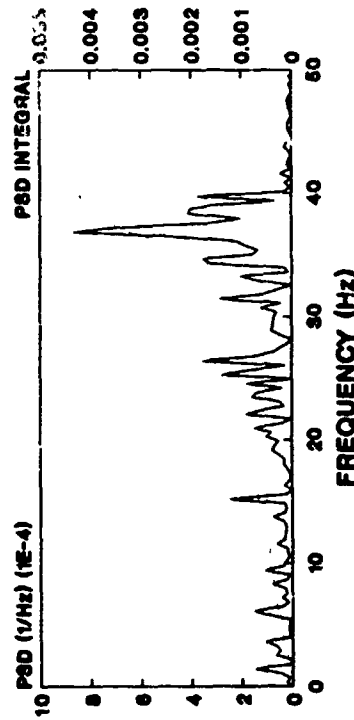
FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

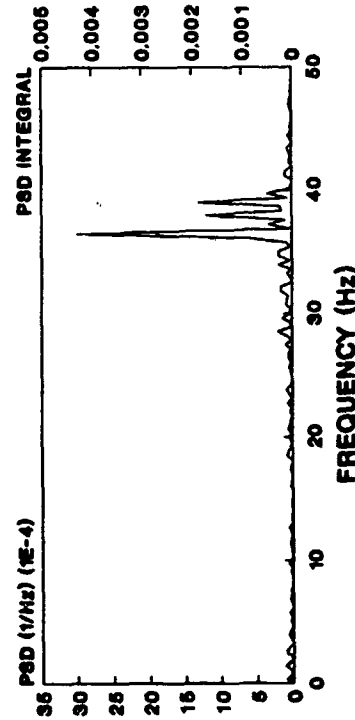
CYLINDER - HT 8.48 - THETA 45 - AZ 000

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



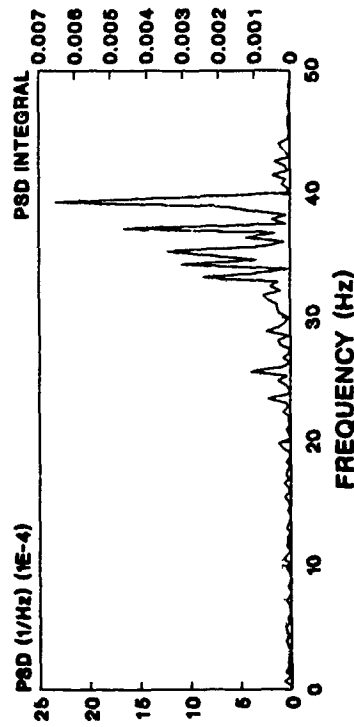
CYLINDER - MT 8.48 - THETA 48 - AZ 045

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



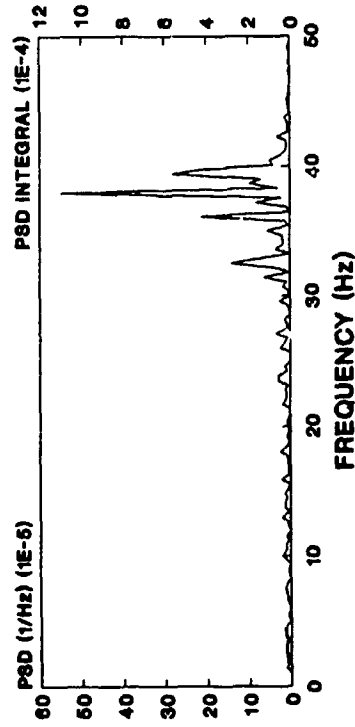
CYLINDER - MT 8.48 - THETA 48 - AZ 045

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



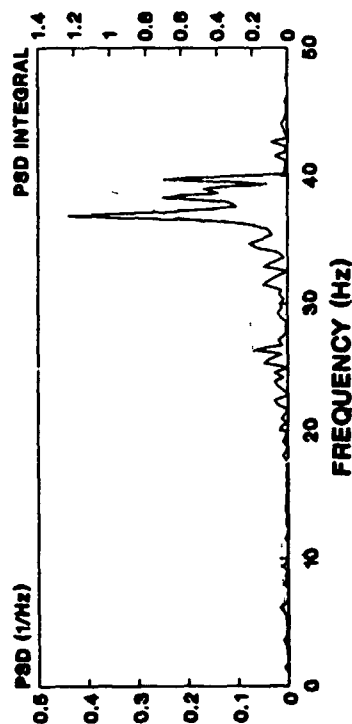
CYLINDER - MT 8.48 - THETA 48 - AZ 045

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - MT 8.48 - THETA 48 - AZ 045

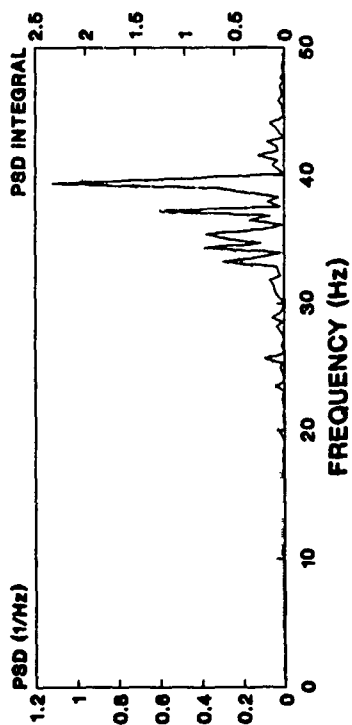
MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 9.46 - THETA 45 - AZ 060

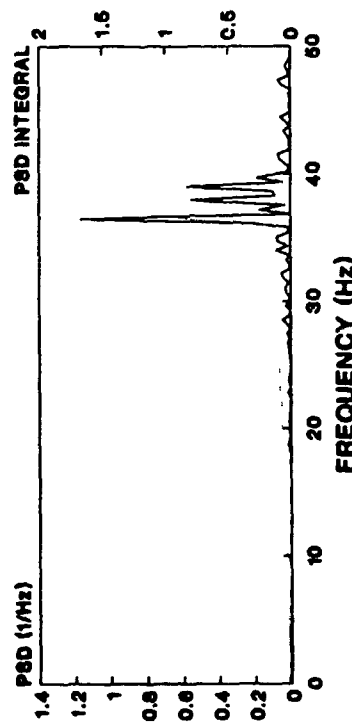
MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 9.46 - THETA 45 - AZ 060

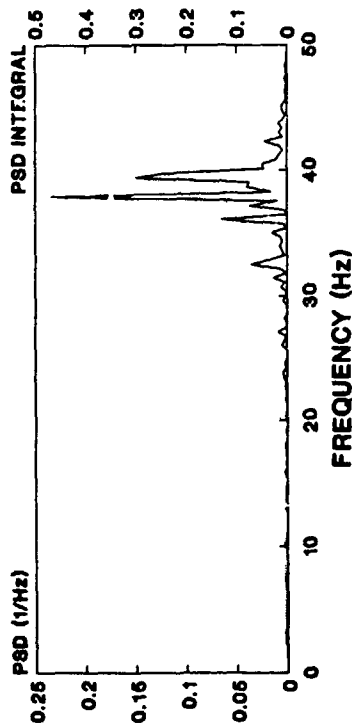
MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

CYLINDER - HT 9.46 - THETA 45 - AZ 060

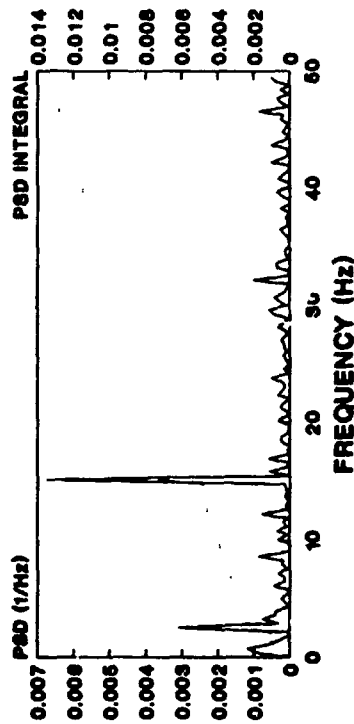
MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

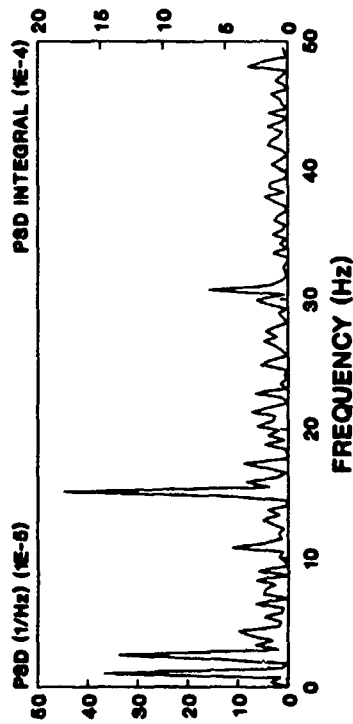
CYLINDER - HT 9.46 - THETA 45 - AZ 060

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



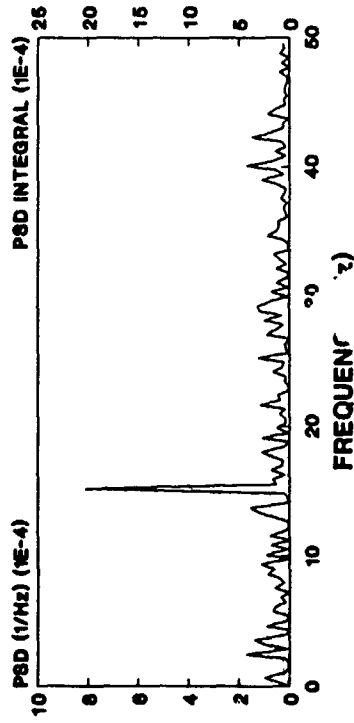
CYLINDER - HT 8.48 - THETA 45 - AZ 090

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



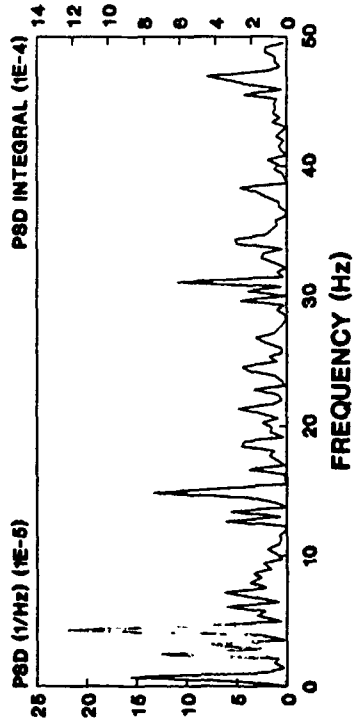
CYLINDER - HT 8.48 - THETA 45 - AZ 090

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



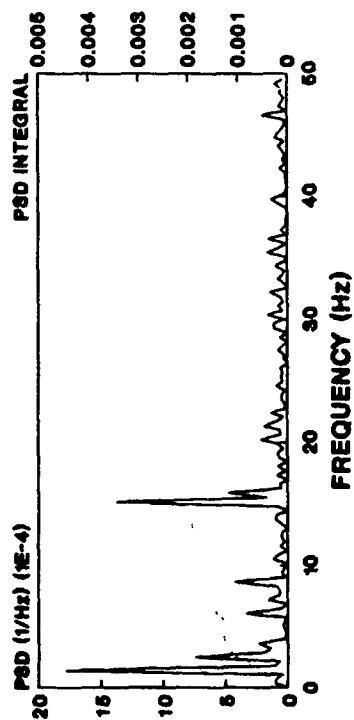
CYLINDER - HT 8.48 - THETA 45 - AZ 090

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.48 - THETA 45 - AZ 090

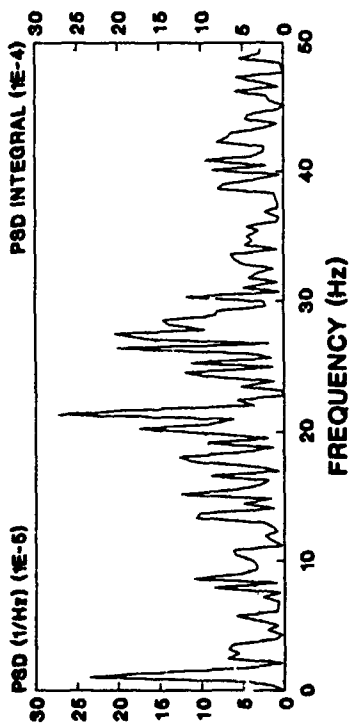
MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

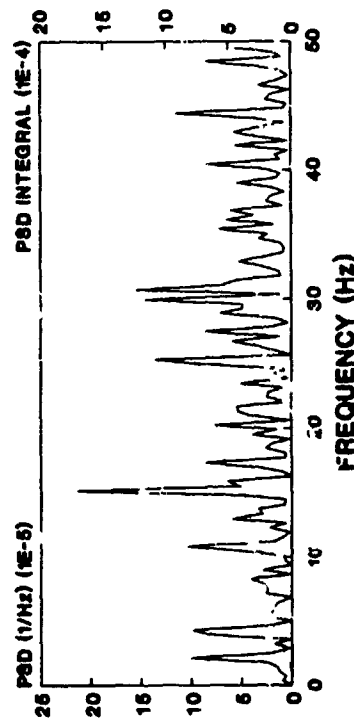
MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

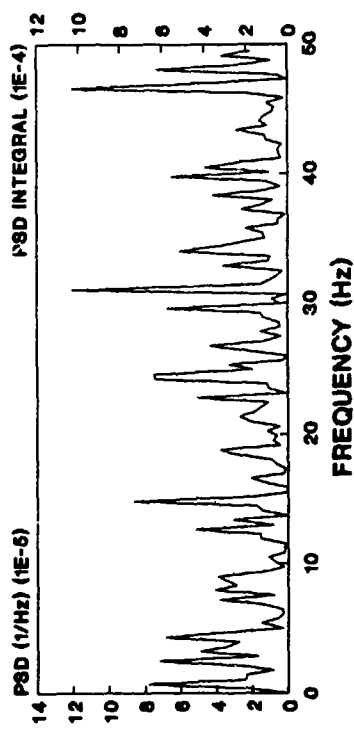
MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

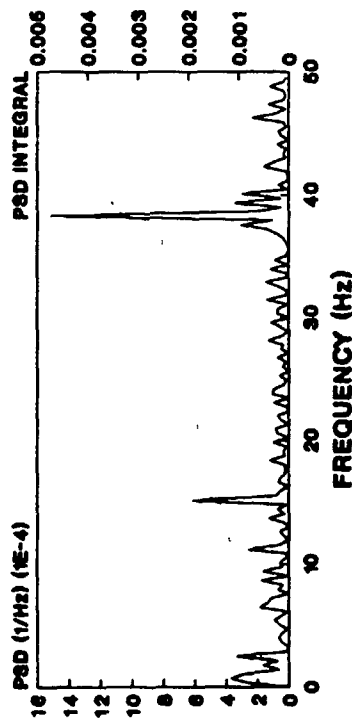
MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

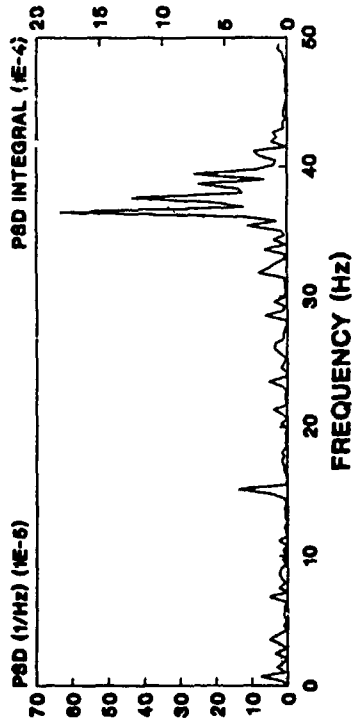
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

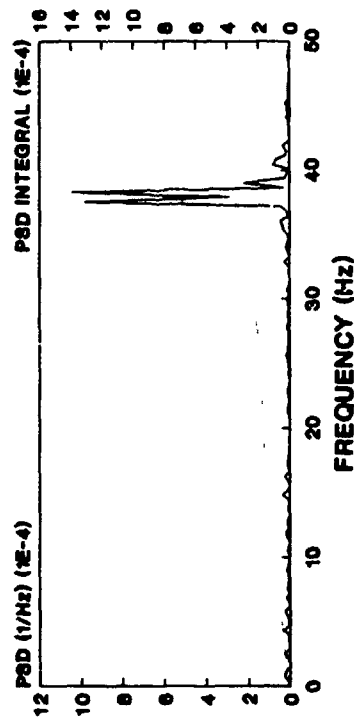
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

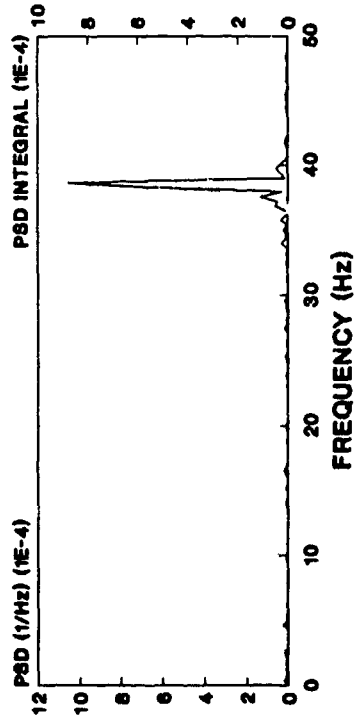
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.46 - THETA 45 - AZ 090

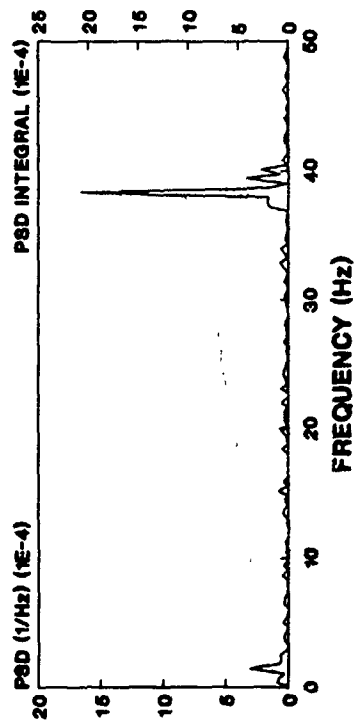
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

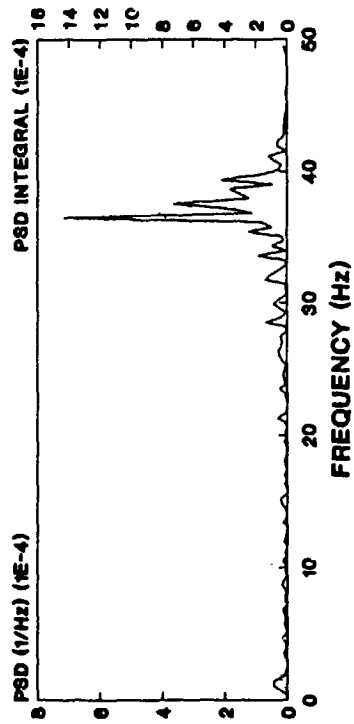
CYLINDER - HT 8.46 - THETA 45 - AZ 090

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



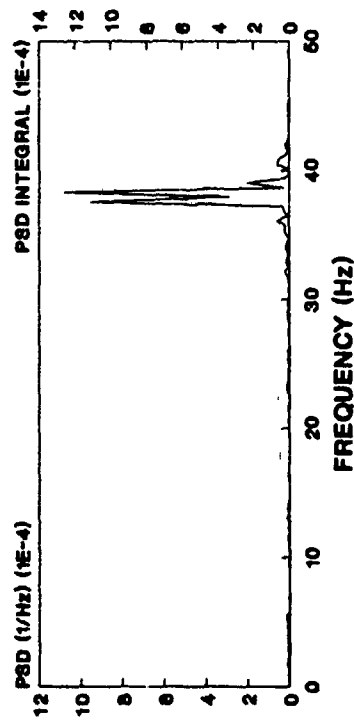
CYLINDER - HT 8.48 - THETA 48 - AZ 090

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



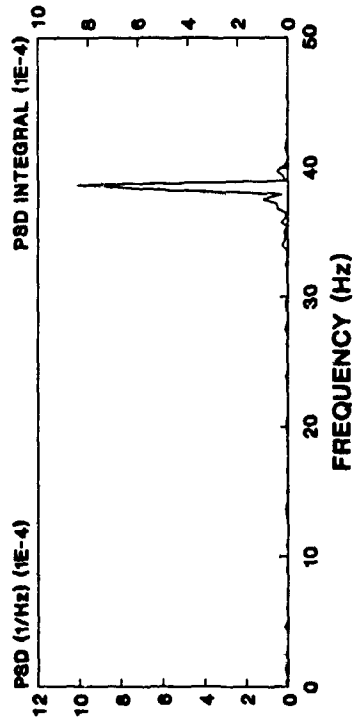
CYLINDER - HT 8.48 - THETA 48 - AZ 090

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



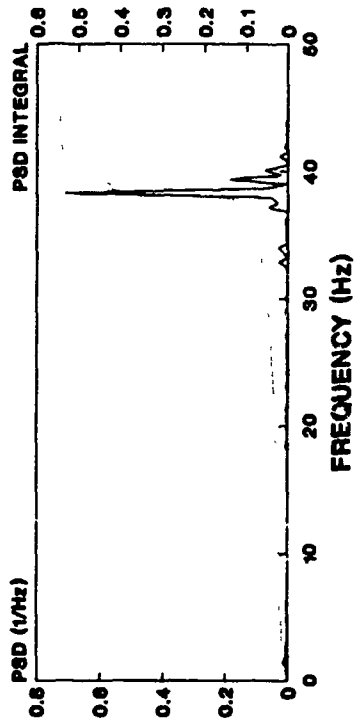
CYLINDER - HT 8.48 - THETA 48 - AZ 090

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



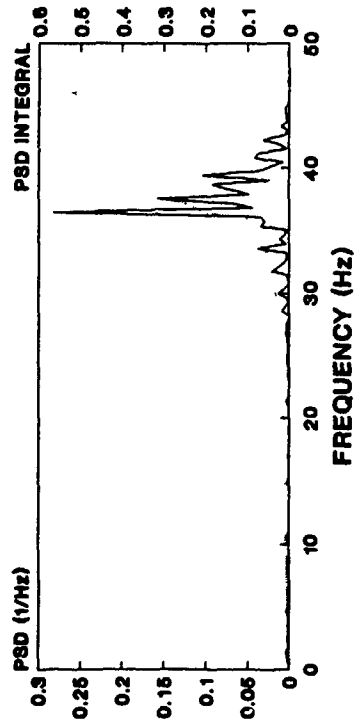
CYLINDER - HT 8.48 - THETA 48 - AZ 090

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



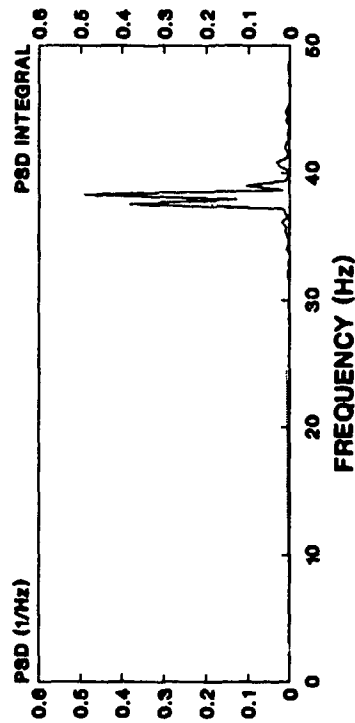
CYLINDER - HT 8.46 - THETA 45 - AZ 090

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



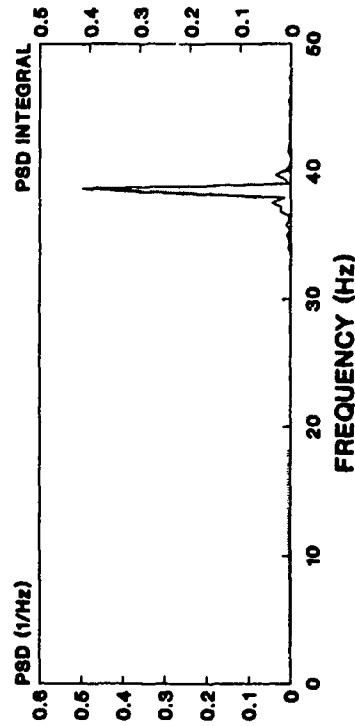
CYLINDER - HT 8.46 - THETA 45 - AZ 090

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



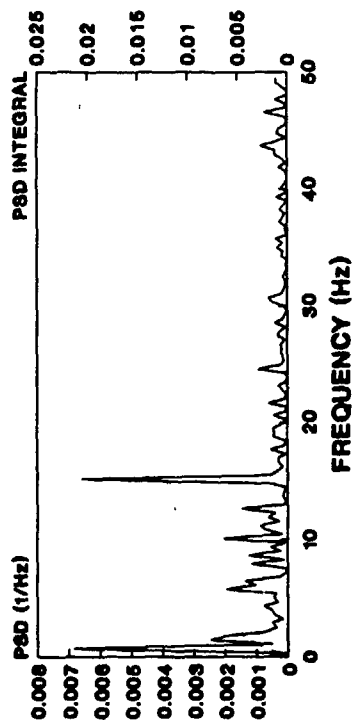
CYLINDER - HT 8.46 - THETA 45 - AZ 090

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



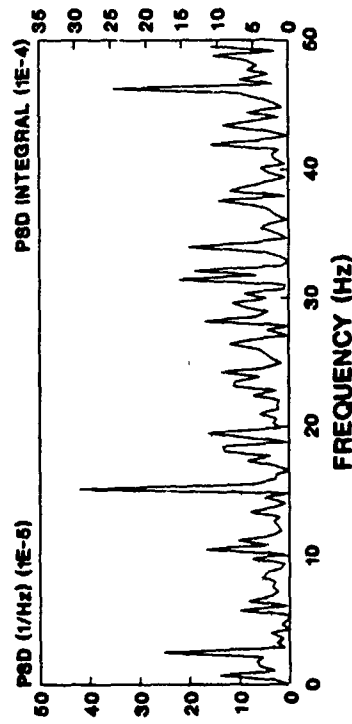
CYLINDER - HT 8.46 - THETA 45 - AZ 090

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



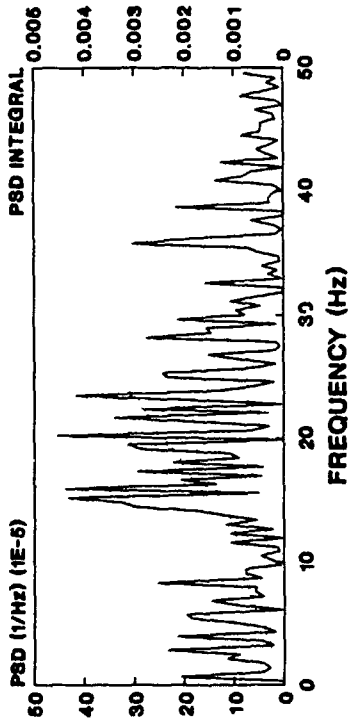
CYLINDER - HT 8.48 - THETA 45 - AZ 120

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



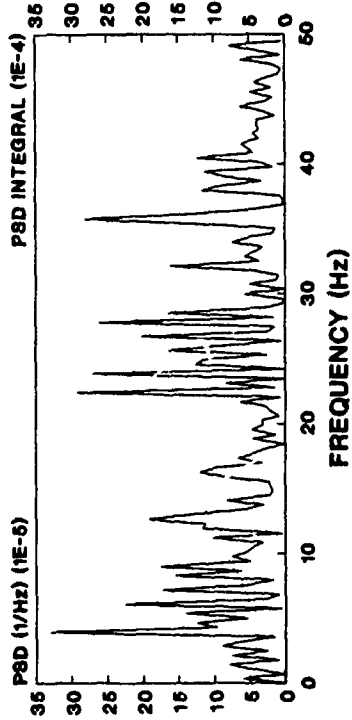
CYLINDER - HT 8.48 - THETA 45 - AZ 120

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



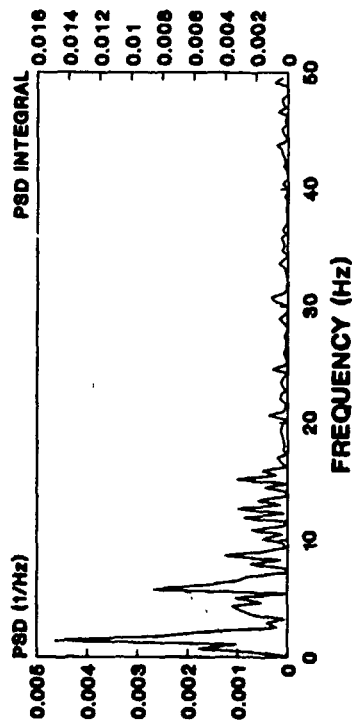
CYLINDER - HT 8.48 - THETA 45 - AZ 120

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



CYLINDER - HT 8.48 - THETA 45 - AZ 120

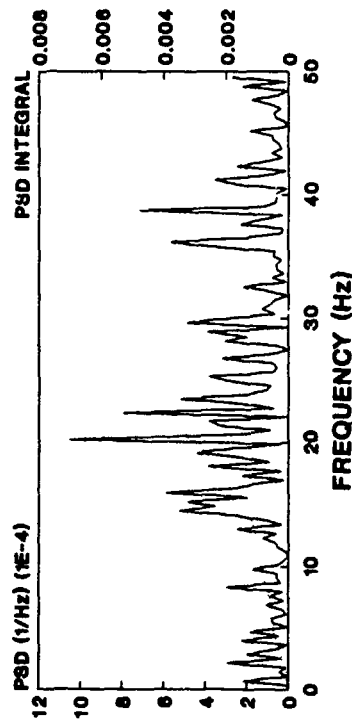
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 180

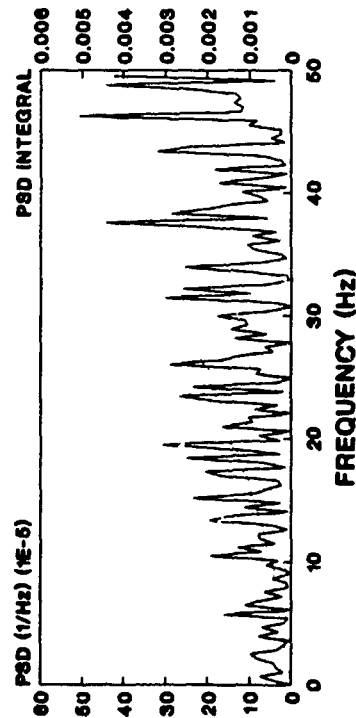
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 120

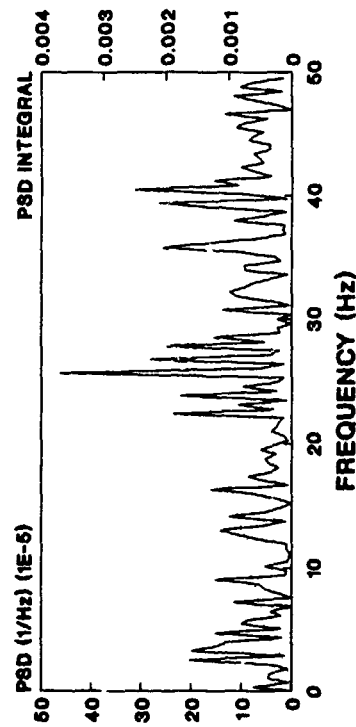
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 180

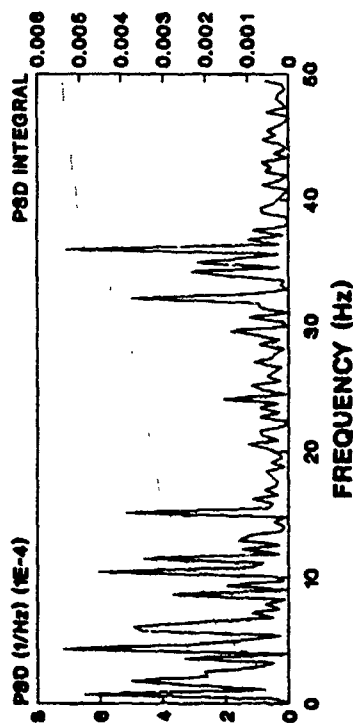
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

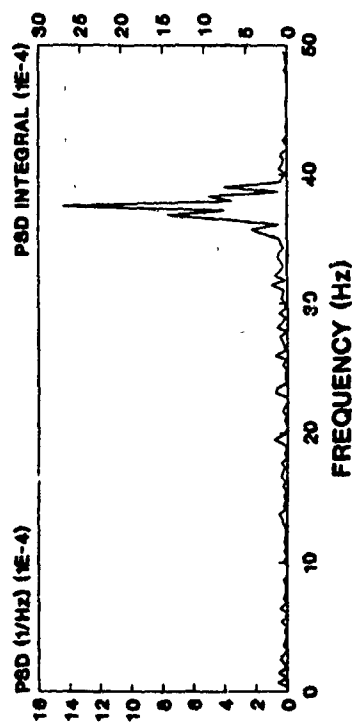
CYLINDER - MT 8.48 - THETA 45 - AZ 120

FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



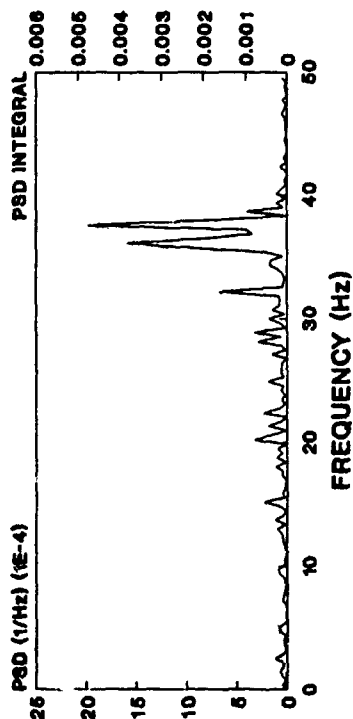
CYLINDER - MT 8.48 - THETA 45 - AZ 120

FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



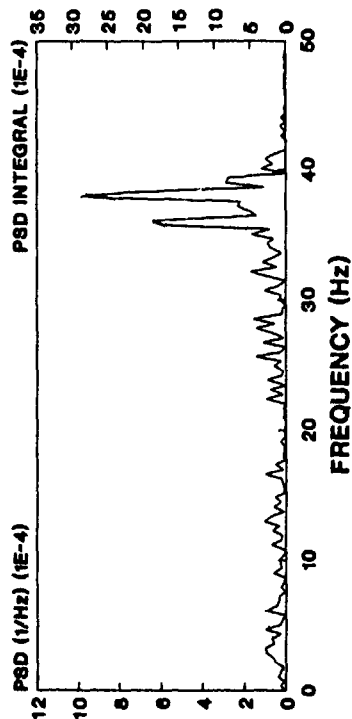
CYLINDER - MT 8.48 - THETA 45 - AZ 120

FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



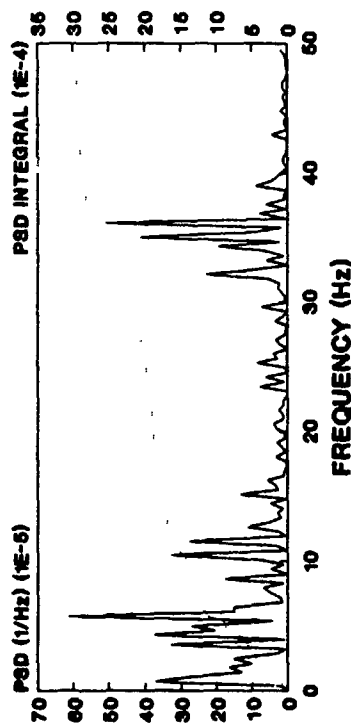
CYLINDER - MT 8.48 - THETA 45 - AZ 120

FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



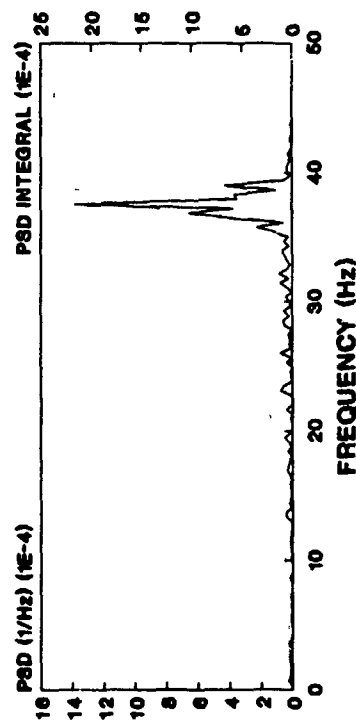
CYLINDER - MT 8.48 - THETA 45 - AZ 120

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



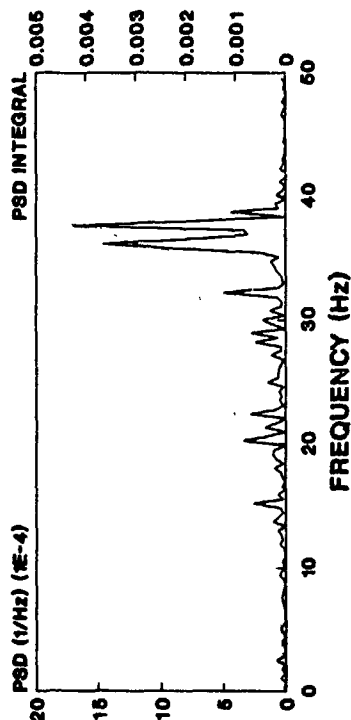
CYLINDER - HT 8.48 - THETA 45 - AZ 120

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



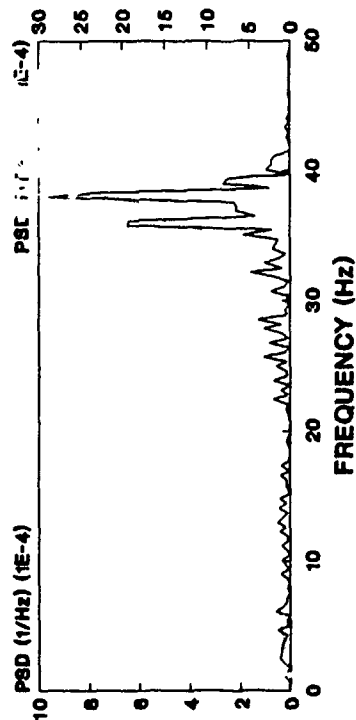
CYLINDER - HT 8.48 - THETA 45 - AZ 120

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



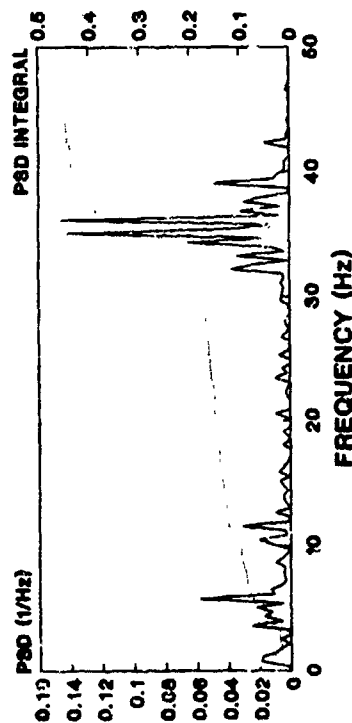
CYLINDER - HT 8.48 - THETA 45 - AZ 120

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 45 - AZ 120

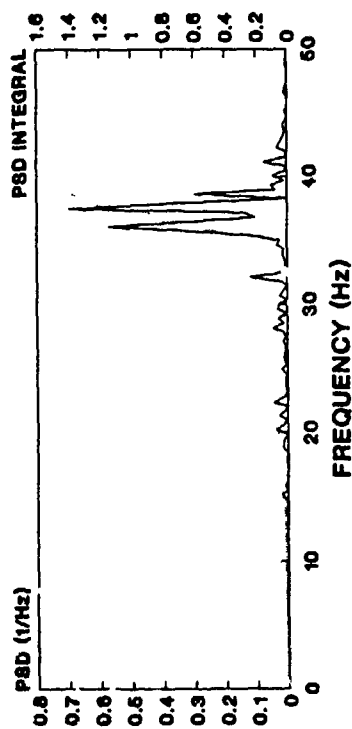
MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 120

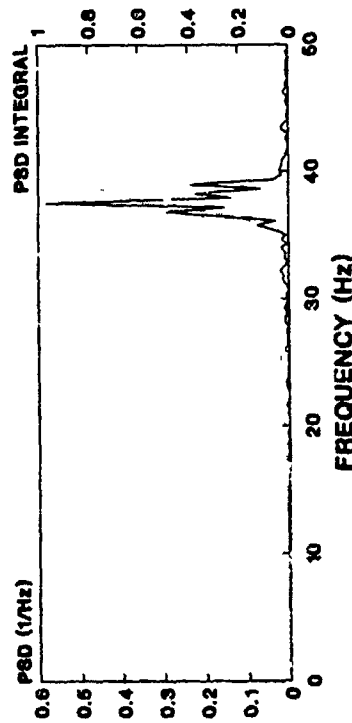
MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 120

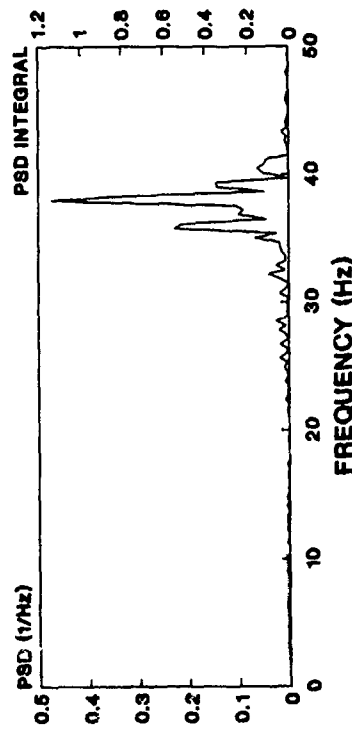
MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 120

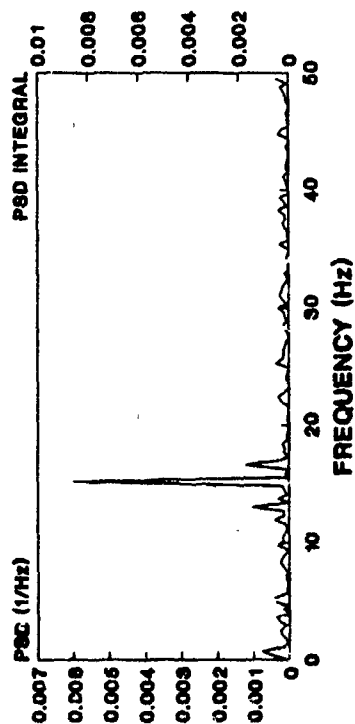
MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

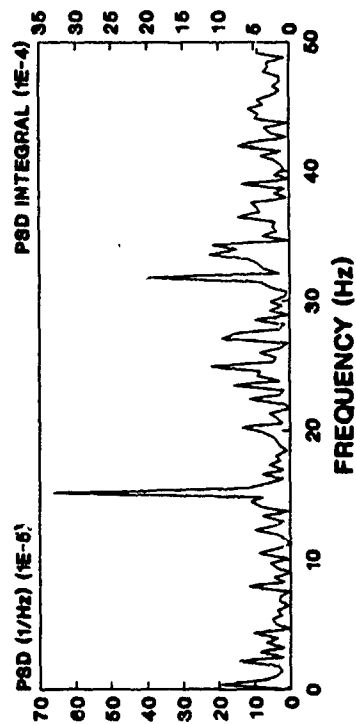
CYLINDER - HT 8.48 - THETA 45 - AZ 120

FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



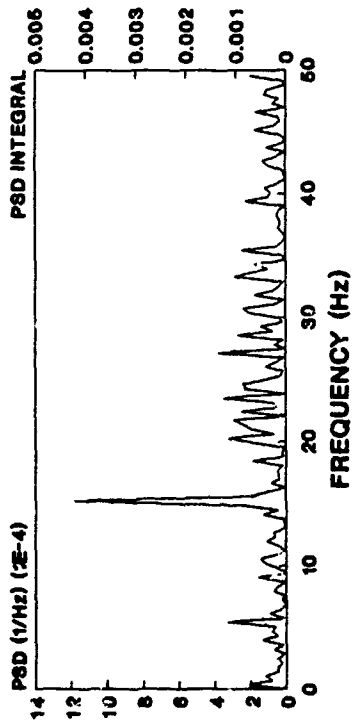
CYLINDER - HT 8.48 - THETA 48 - AZ 136

FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



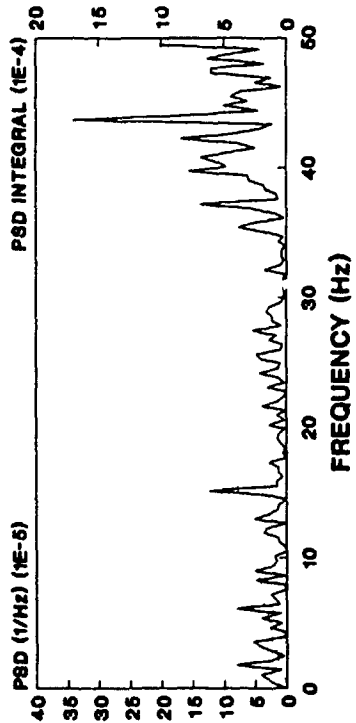
CYLINDER - HT 8.48 - THETA 48 - AZ 136

FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



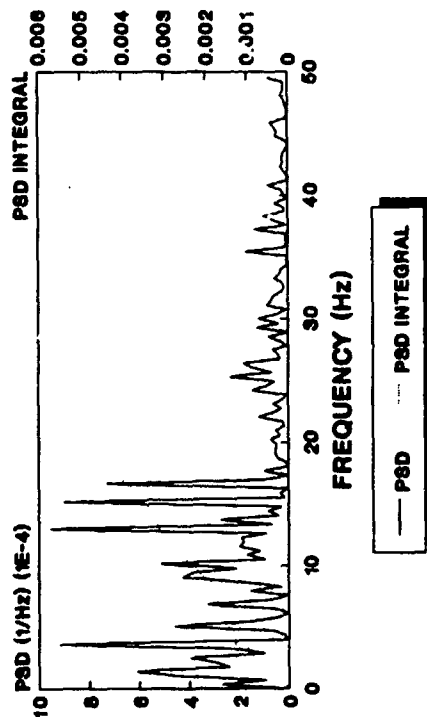
CYLINDER - HT 8.48 - THETA 48 - AZ 136

FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



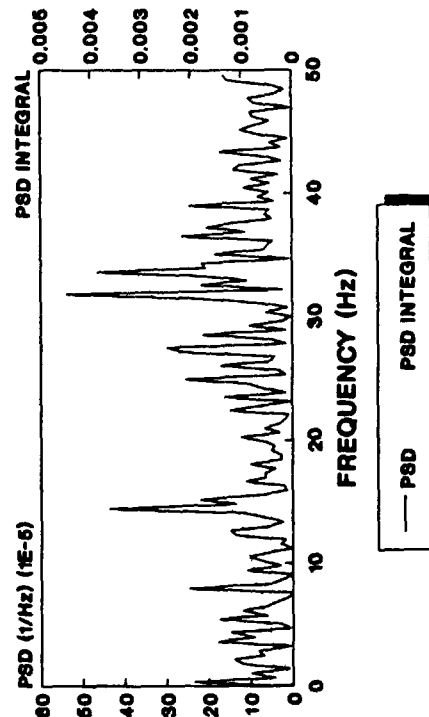
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



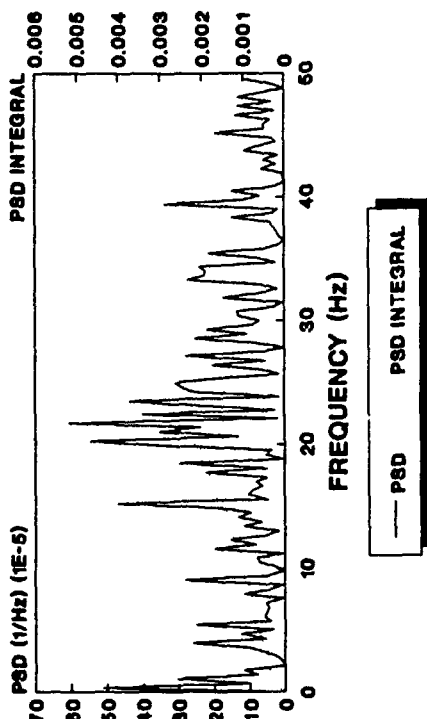
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



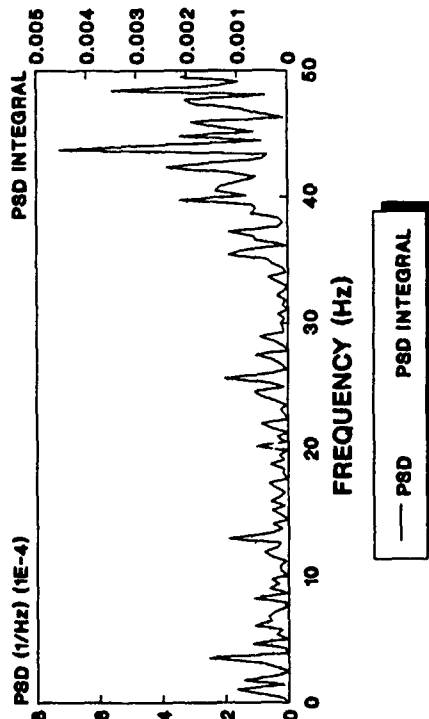
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



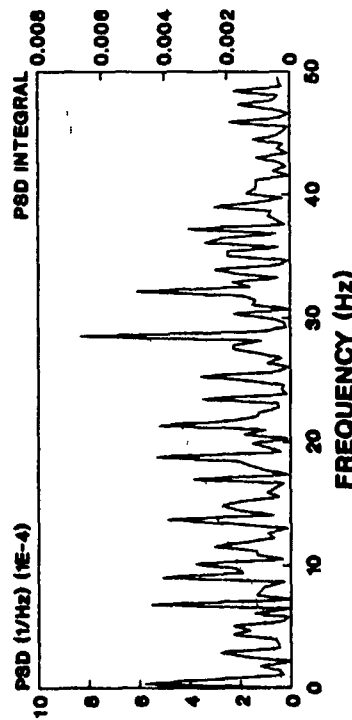
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 48 - AZ 136

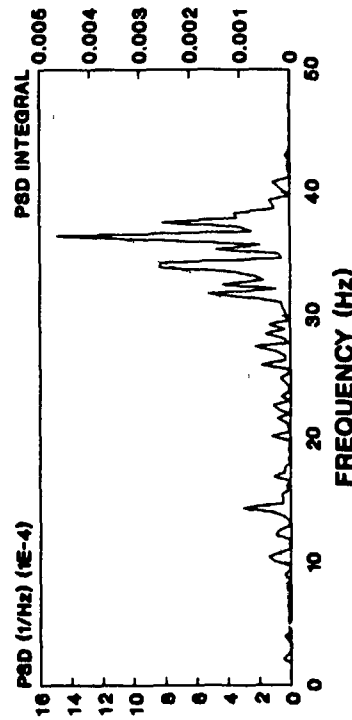
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 48 - AZ 136

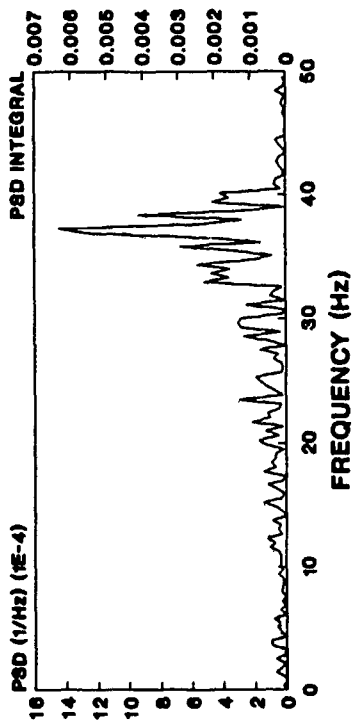
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 48 - AZ 136

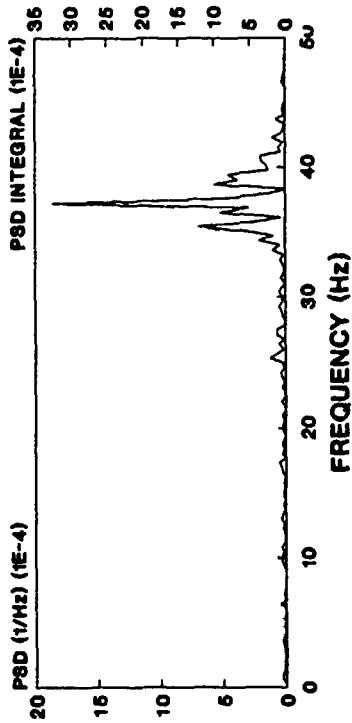
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 48 - AZ 136

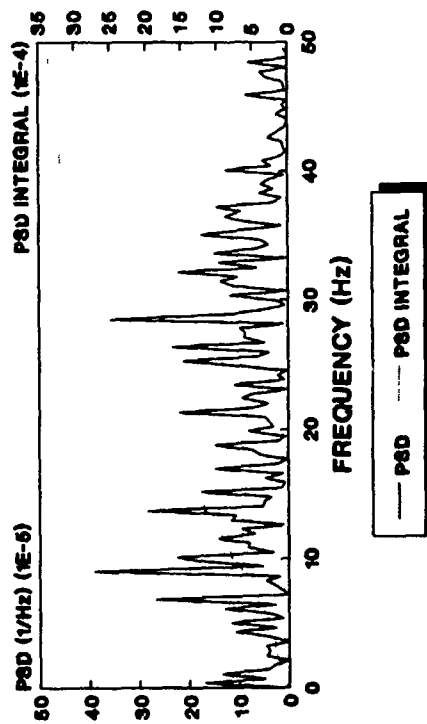
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

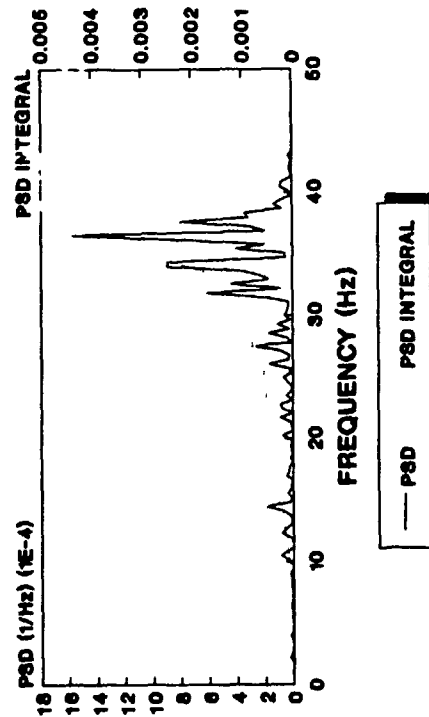
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



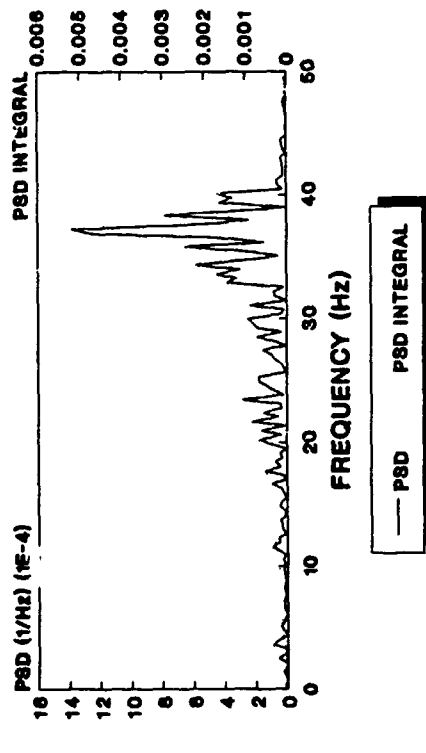
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



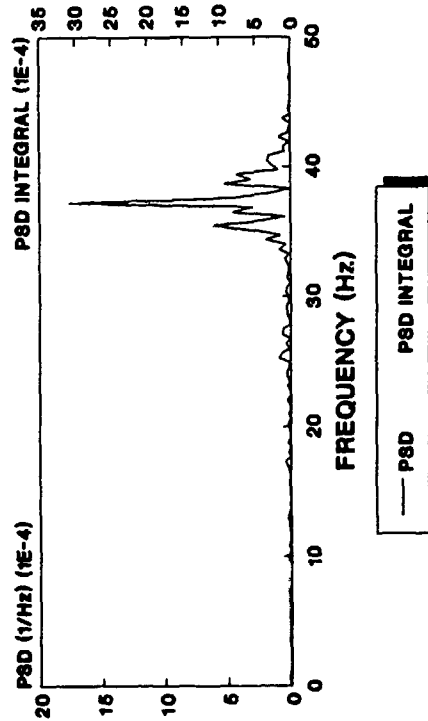
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



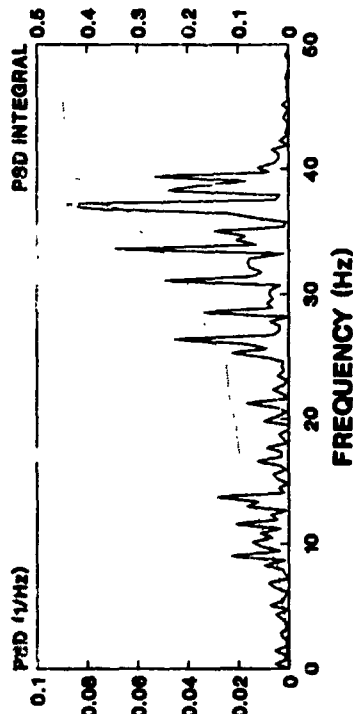
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



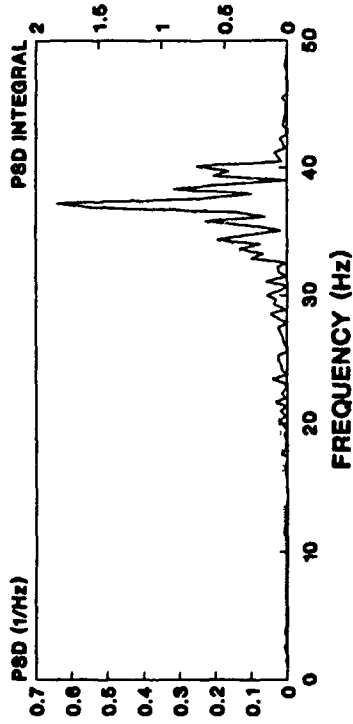
CYLINDER - HT 8.48 - THETA 48 - AZ 136

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



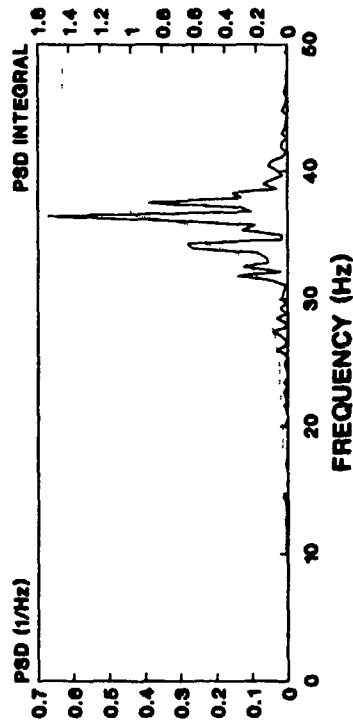
CYLINDER - HT 8.48 - THETA 45 - AZ 135

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



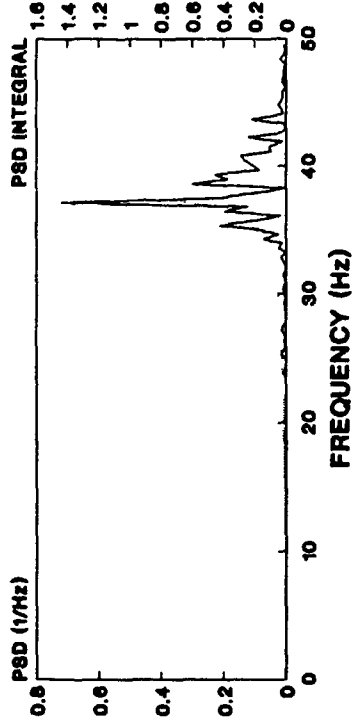
CYLINDER - HT 8.48 - THETA 45 - AZ 135

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



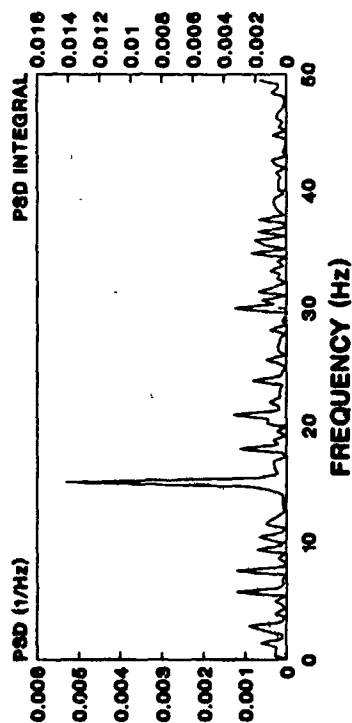
CYLINDER - HT 8.48 - THETA 45 - AZ 135

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



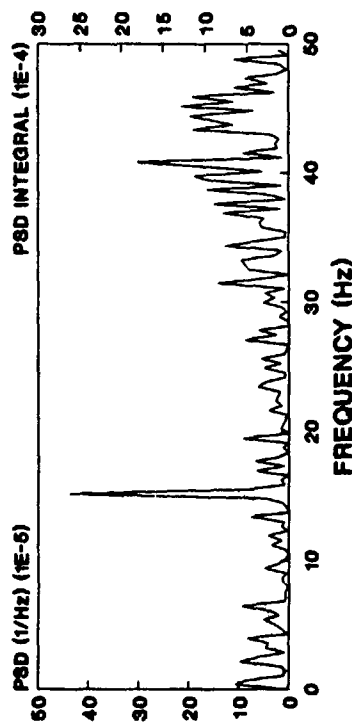
CYLINDER - HT 8.48 - THETA 45 - AZ 135

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



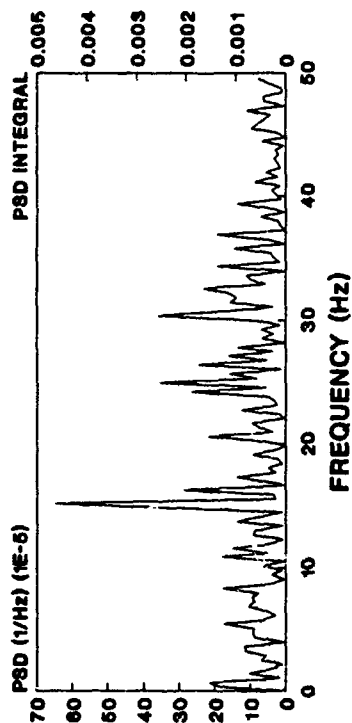
CYLINDER - HT 8.46 - THETA 45 - AZ 180

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



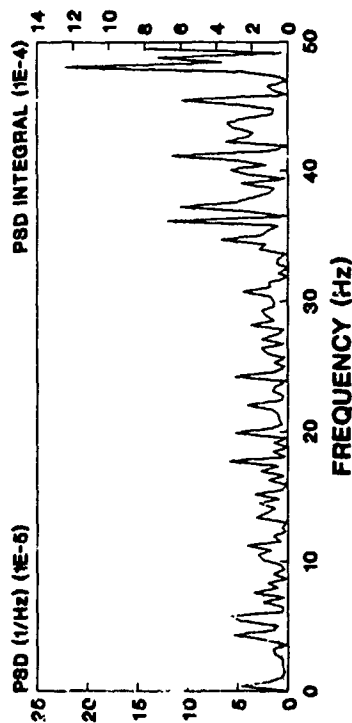
CYLINDER - HT 8.46 - THETA 45 - AZ 180

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



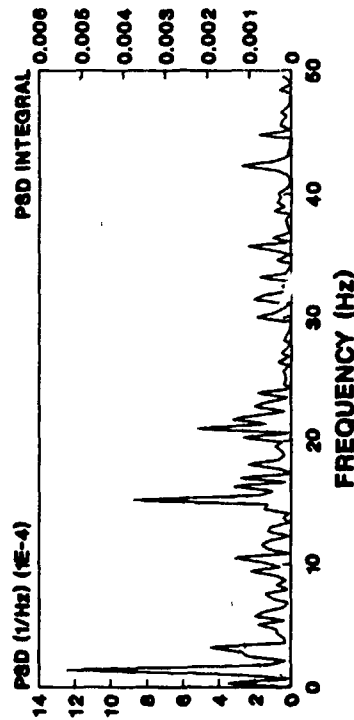
CYLINDER - HT 8.46 - THETA 45 - AZ 180

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



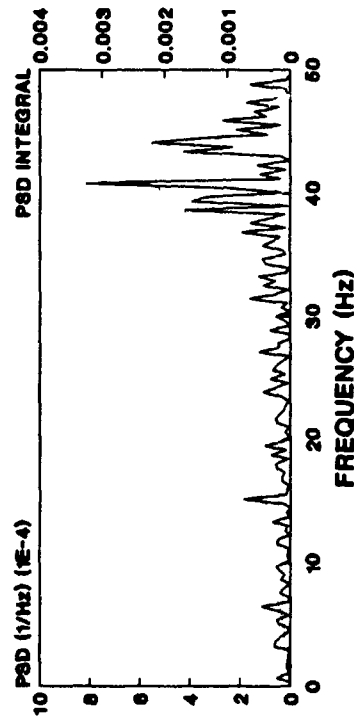
CYLINDER - HT 8.46 - THETA 45 - AZ 180

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



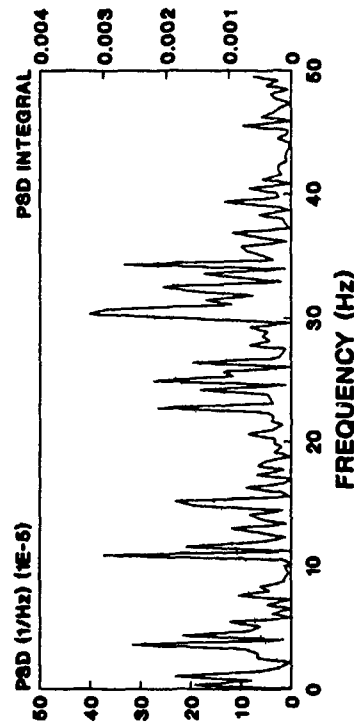
CYLINDER - HT 8.48 - THETA 46 - AZ 160

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



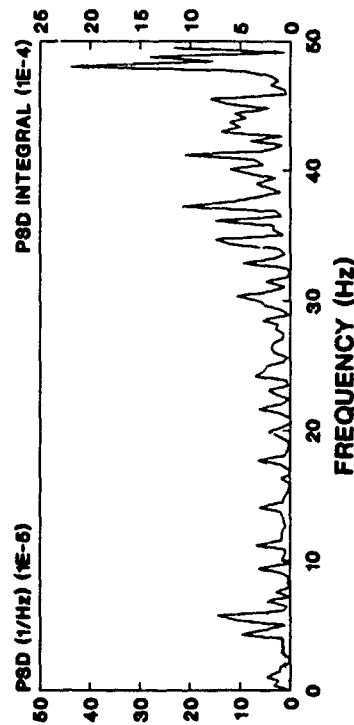
CYLINDER - HT 8.48 - THETA 46 - AZ 160

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



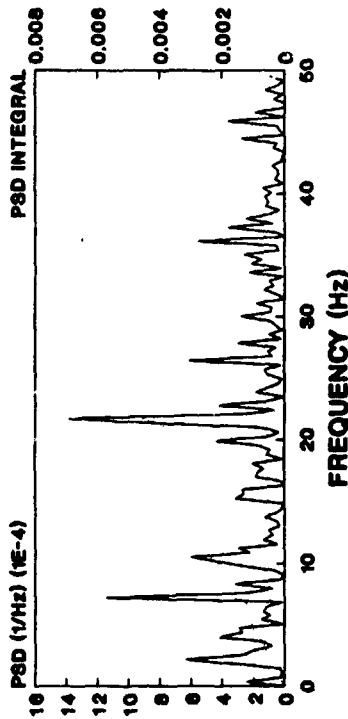
CYLINDER - HT 8.48 - THETA 46 - AZ 160

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 46 - AZ 160

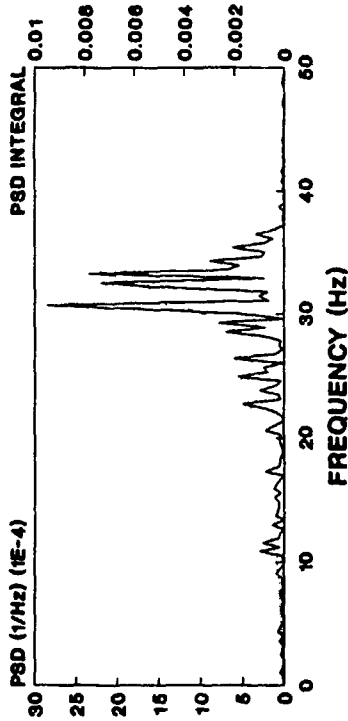
FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 9.48 - THETA 48 - AZ 180

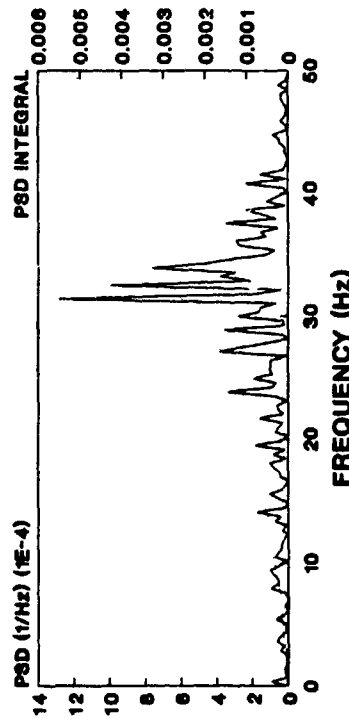
FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 9.48 - THETA 48 - AZ 180

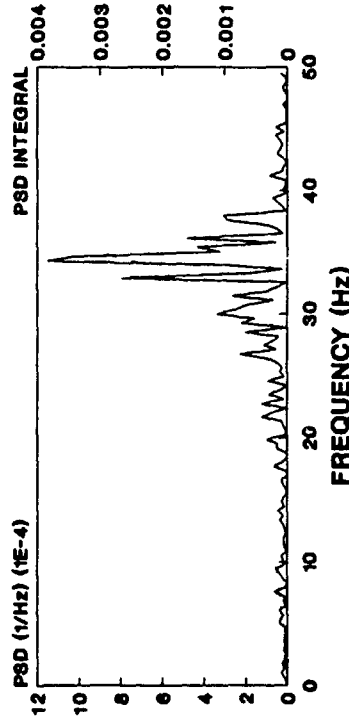
FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - HT 9.48 - THETA 48 - AZ 180

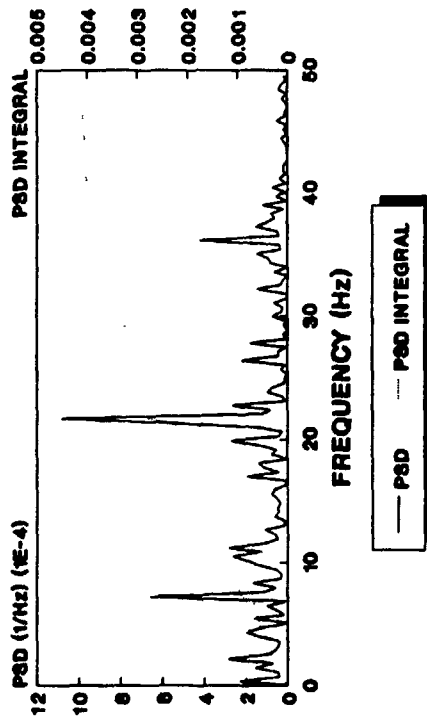
FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

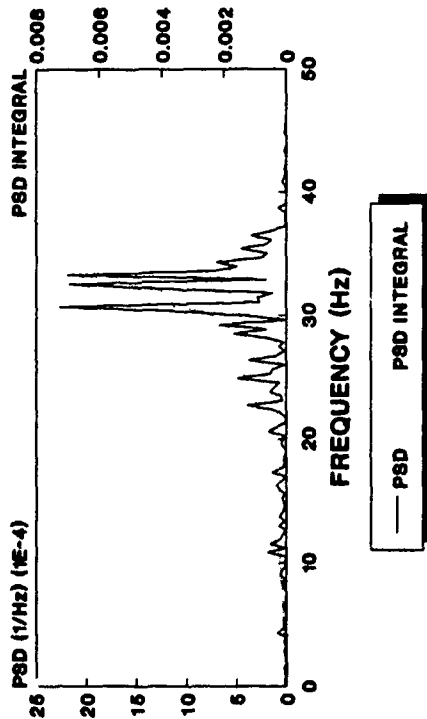
CYLINDER - HT 9.48 - THETA 48 - AZ 180

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



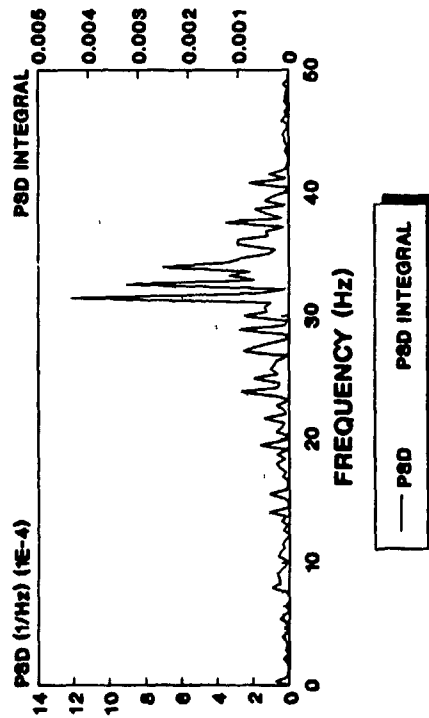
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



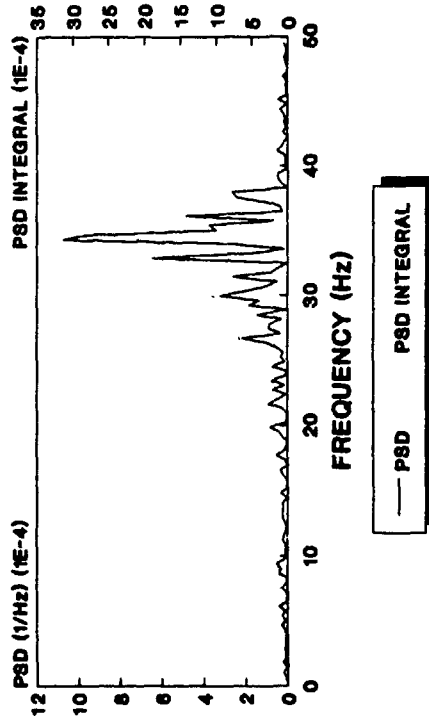
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



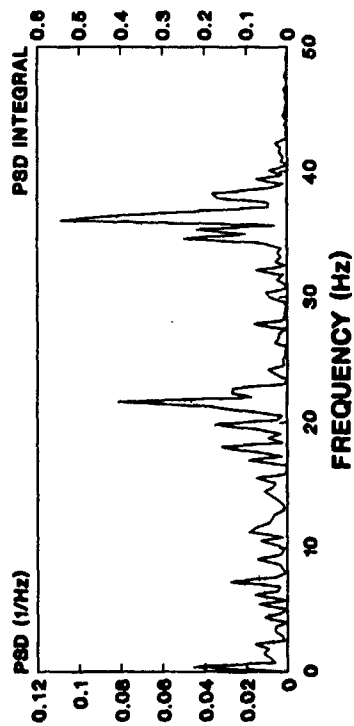
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



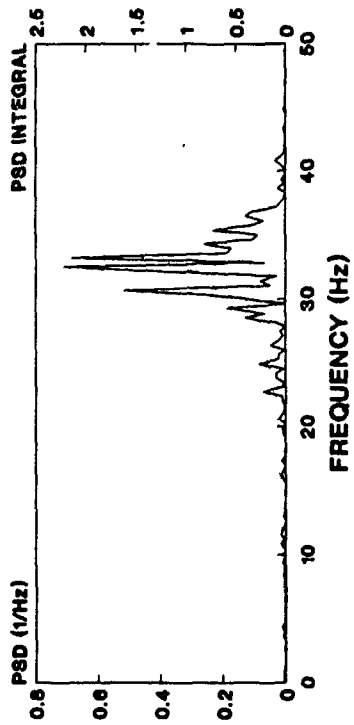
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



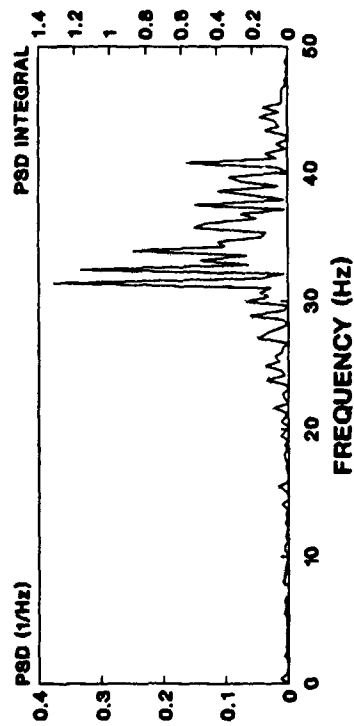
CYLINDER - HT 8.48 - THETA 45 - AZ 160

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



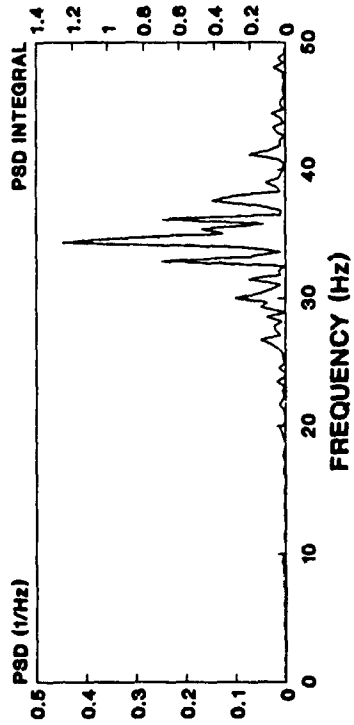
CYLINDER - HT 8.48 - THETA 45 - AZ 160

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



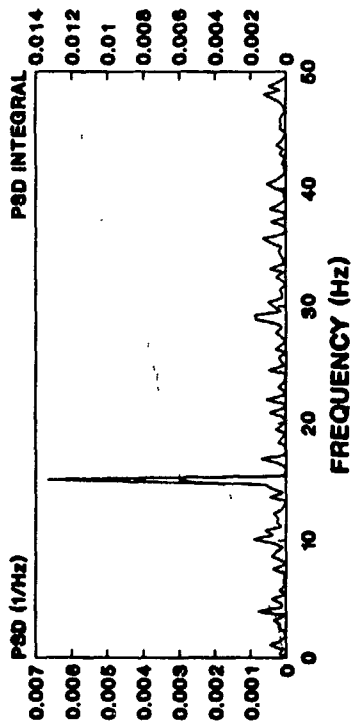
CYLINDER - HT 8.48 - THETA 45 - AZ 160

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 45 - AZ 160

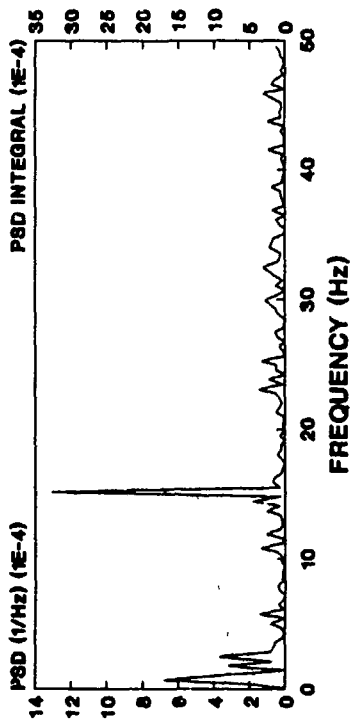
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 180

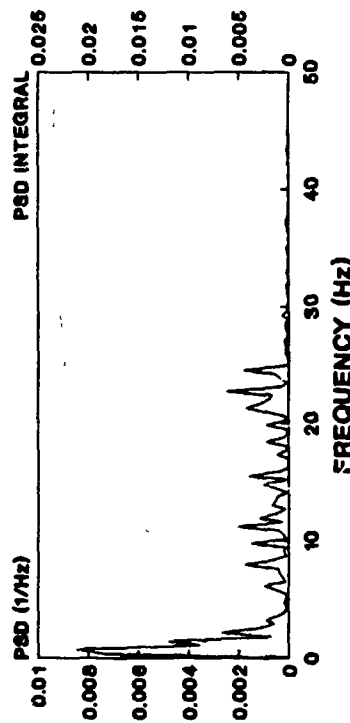
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 180

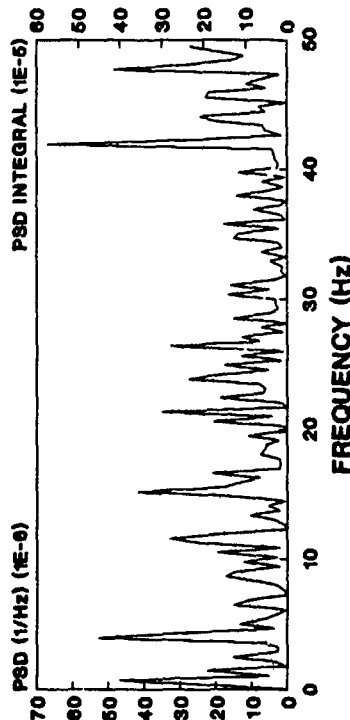
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

CYLINDER - HT 8.48 - THETA 45 - AZ 180

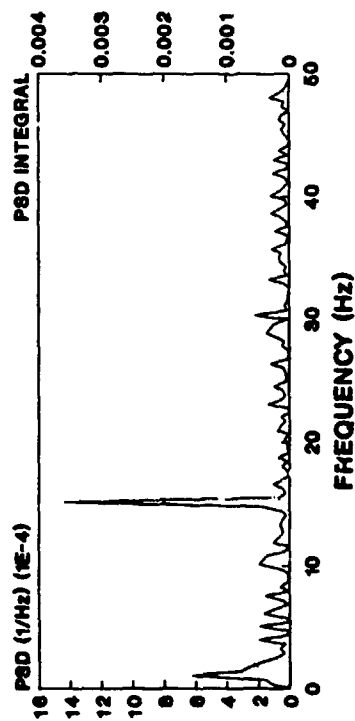
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

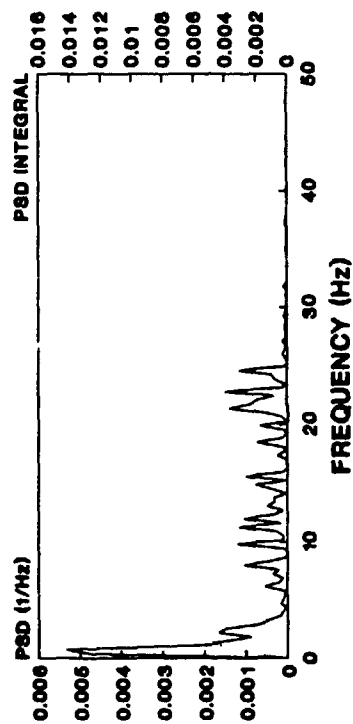
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



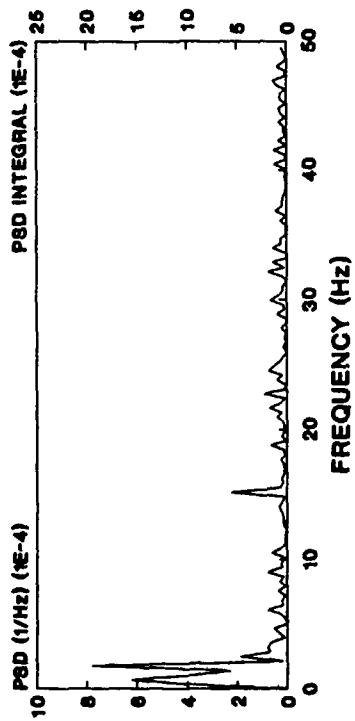
CYLINDER - MT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



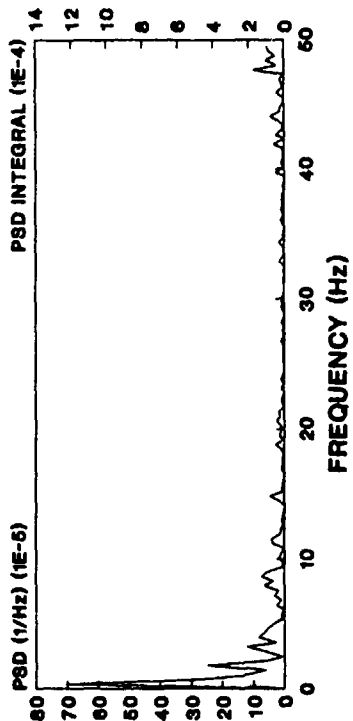
CYLINDER - MT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



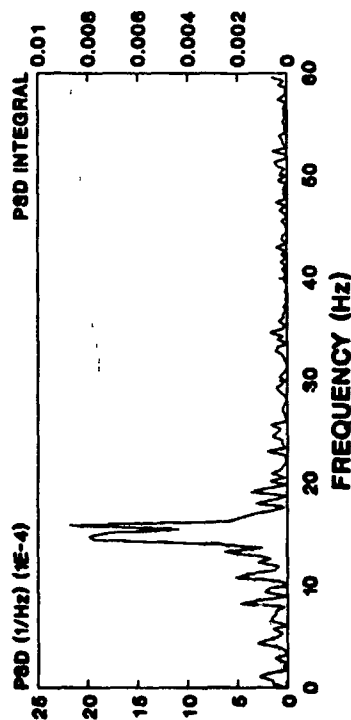
CYLINDER - MT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



CYLINDER - MT 8.48 - THETA 45 - AZ 180

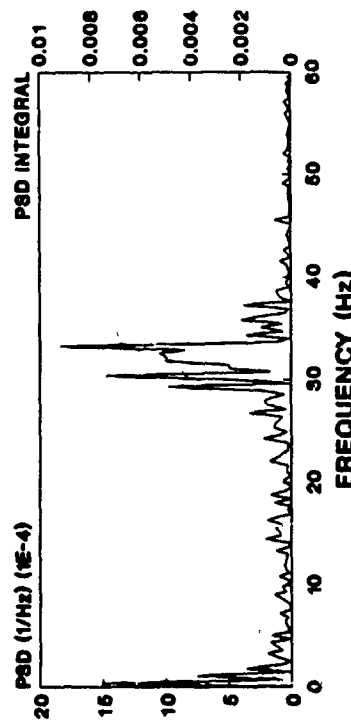
FORCE COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 180

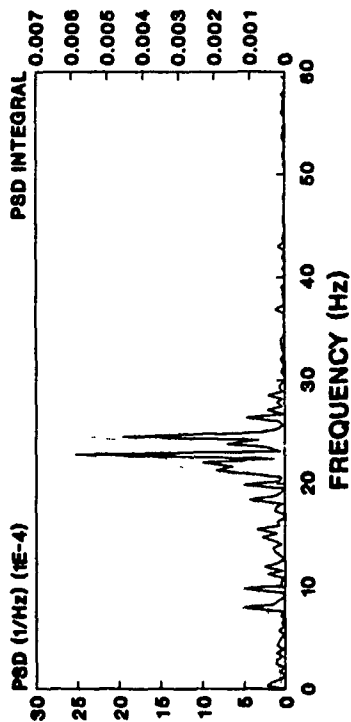
FORCE COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 180

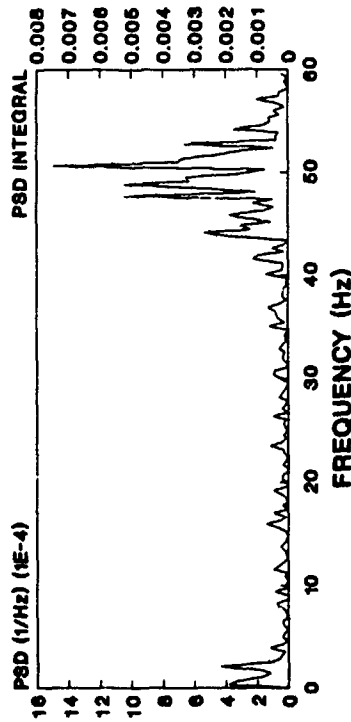
FORCE COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

CYLINDER - MT 8.48 - THETA 45 - AZ 180

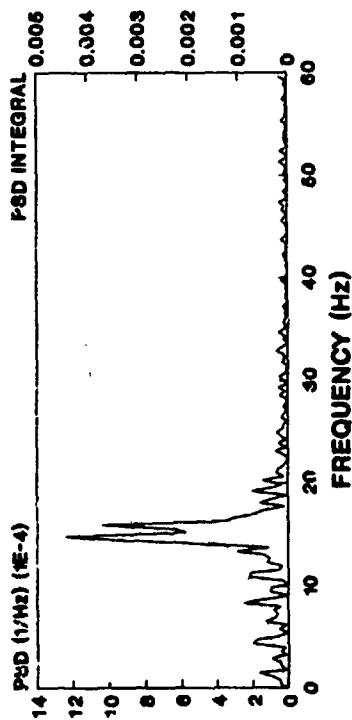
FORCE COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD — PSD INTEGRAL

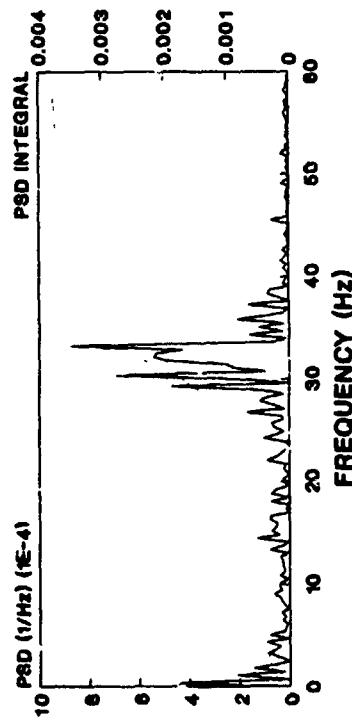
CYLINDER - MT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



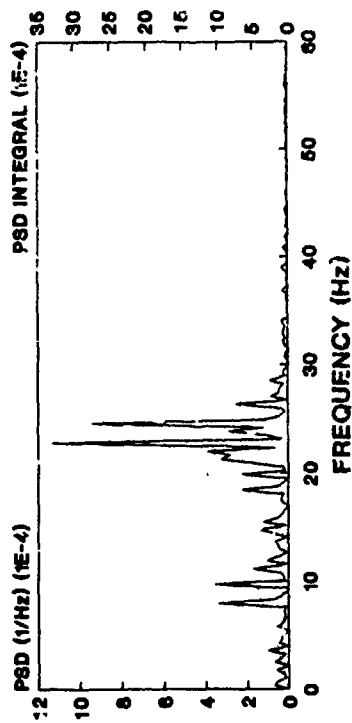
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



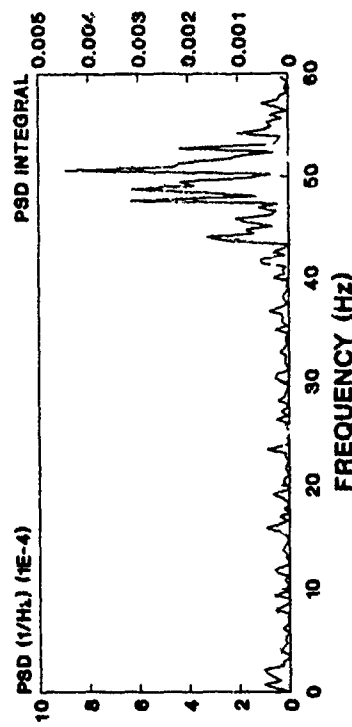
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



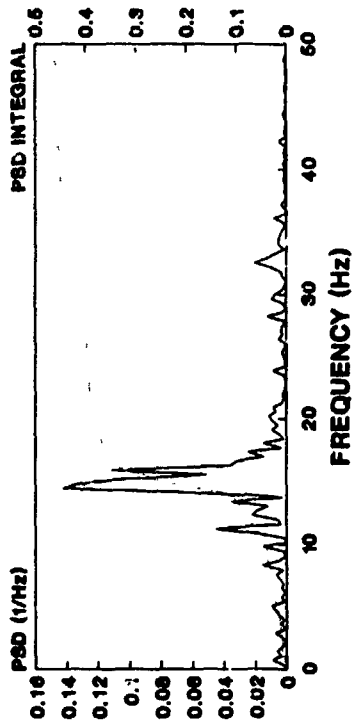
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



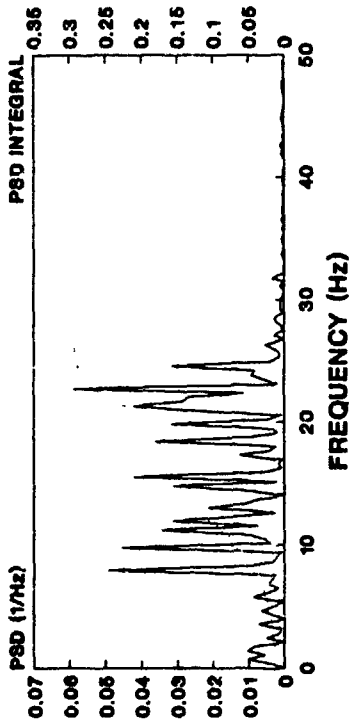
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



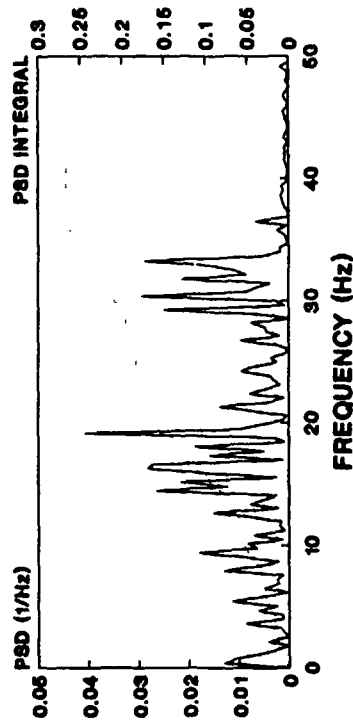
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



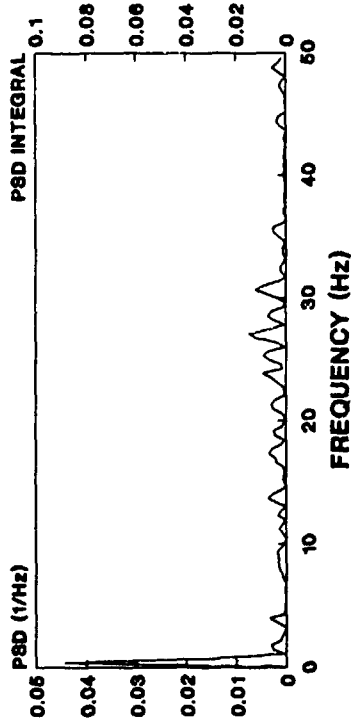
CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 45 - AZ 180

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



CYLINDER - HT 8.48 - THETA 45 - AZ 180

DATA REPORT

SHAPE:	OCTAGON
DECLINATION [THETA (degrees)]:	0
DIMENSIONS [LxWxH (in)]:	8.0 x 8.0 x 10.0
WEIGHT (gm):	1659.3
TORSION FREQUENCY (Hz):	46
LATERAL (SIDE BEND) FREQUENCY (Hz):	51
NORMAL (AFT BEND) FREQUENCY (Hz):	51
AZIMUTHS (degrees):	0, 30, 45, 60, 90

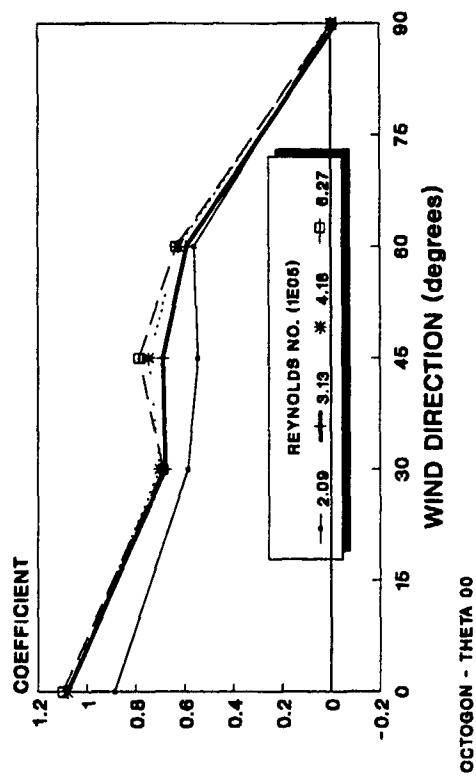
GRAPH CORRECTIONS:

- The mean value of the **ROLL** moment coefficients should be divided by 12.
- The PSD and PSD Integral values of the **ROLL** moment coefficients should be divided by 144.

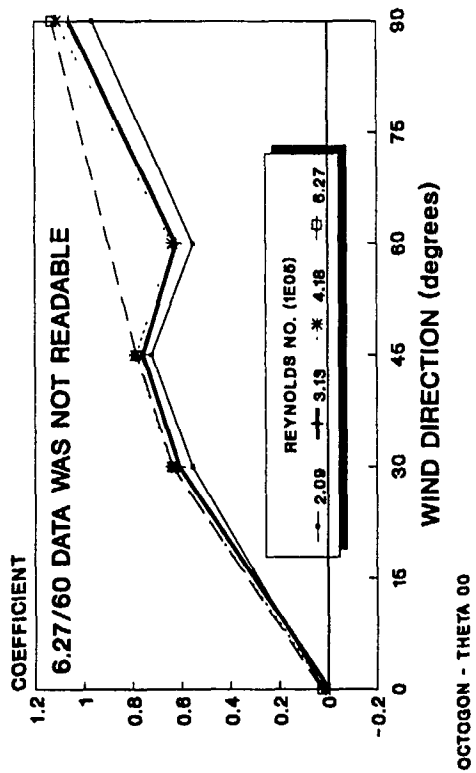
OBSERVATIONS:

- Single frequency shedding signature not observed.
- Poor quality shedding can be seen in the lateral data at azimuths of 0 and 30 degrees, in the lateral and normal data at 45 degrees, and in the normal data at 90 degrees.
- The torsional frequency of 46 Hz can be seen in much of the roll data.
- The 15.176 Hz spike is seen throughout the normal data.

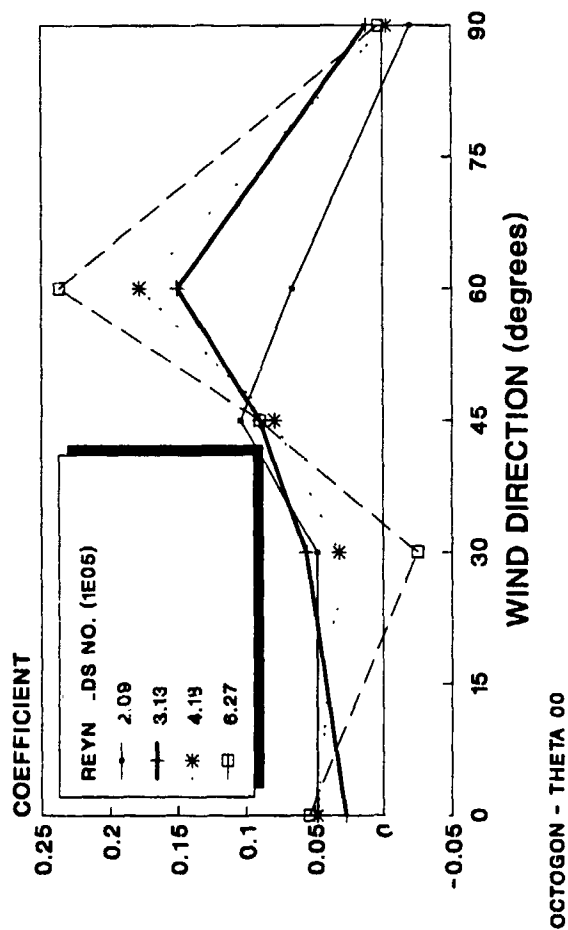
MEAN FORCE COEFFICIENT NORMAL DIRECTION



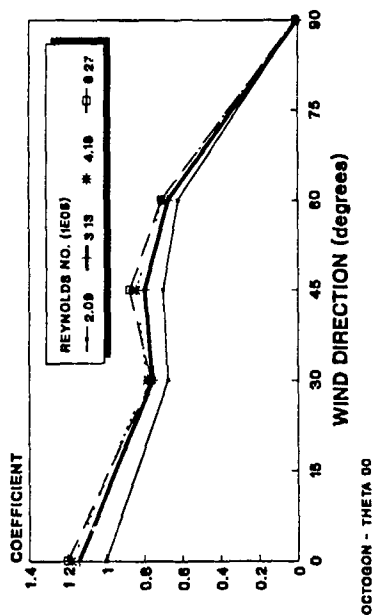
MEAN FORCE COEFFICIENT LATERAL DIRECTION



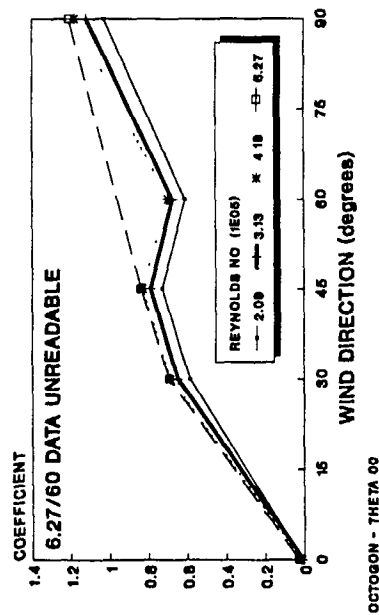
MEAN MOMENT COEFFICIENT ROLL DIRECTION



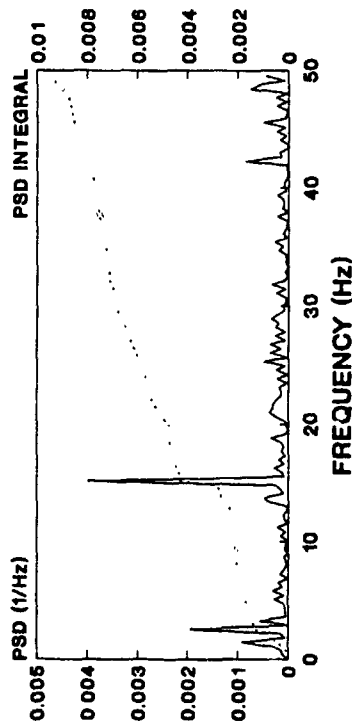
MEAN MOMENT COEFFICIENT NORMAL DIRECTION



MEAN MOMENT COEFFICIENT LATERAL DIRECTION

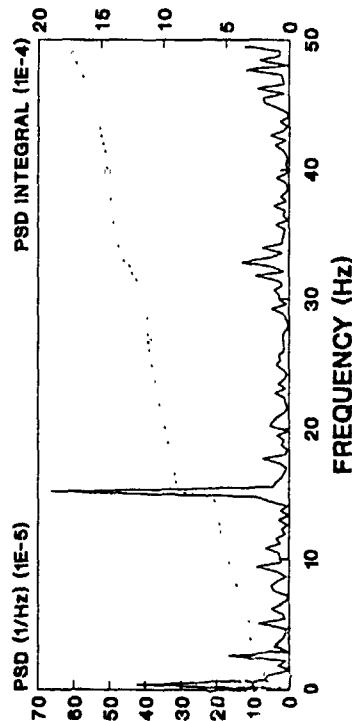


FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



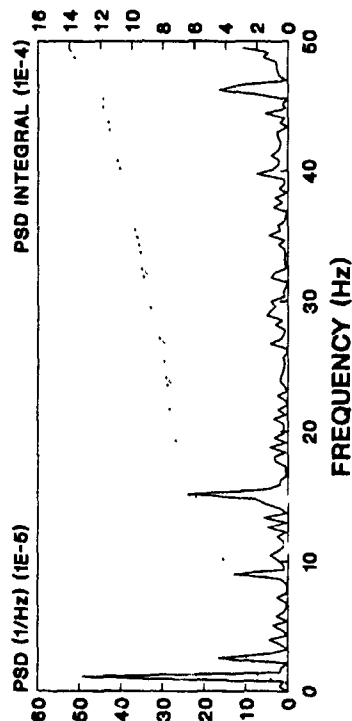
OCTOGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



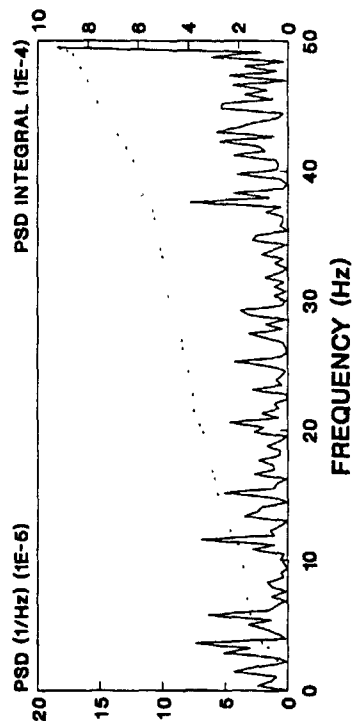
OCTOGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



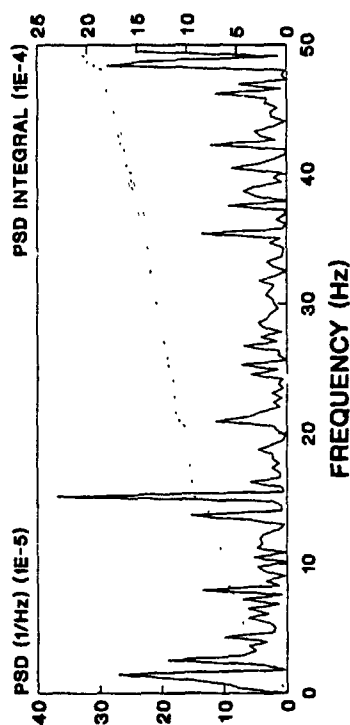
OCTOGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 000

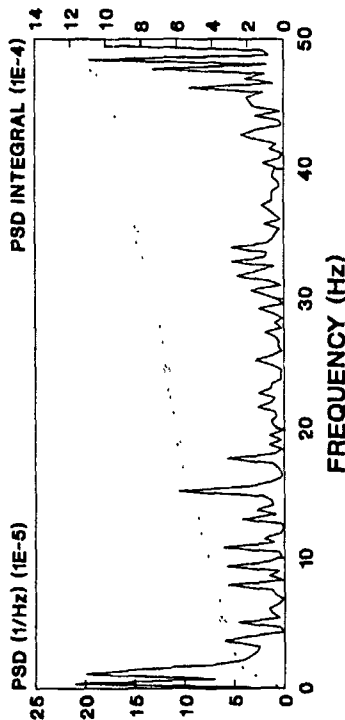
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD ···· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

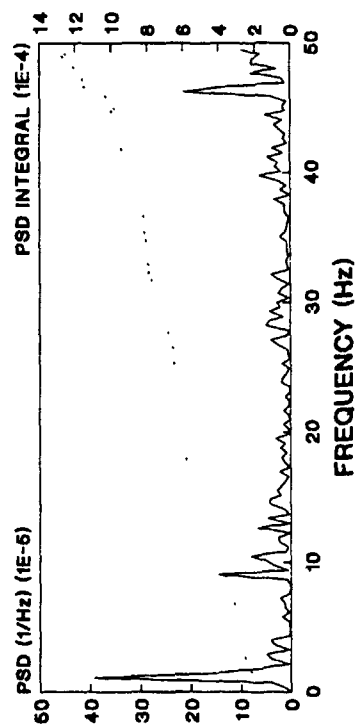
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD ···· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

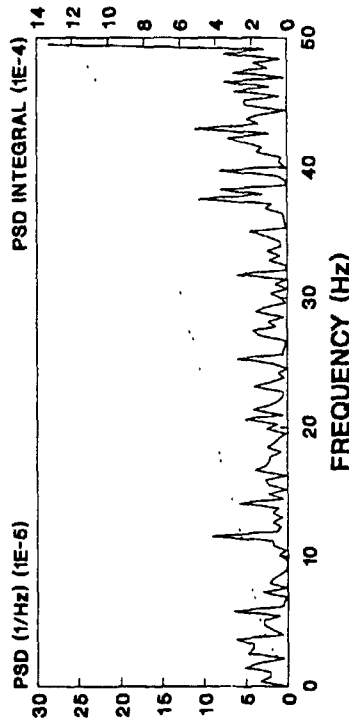
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD ···· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

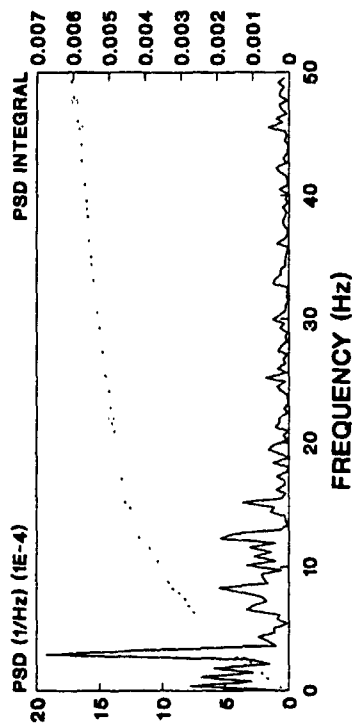
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD ···· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

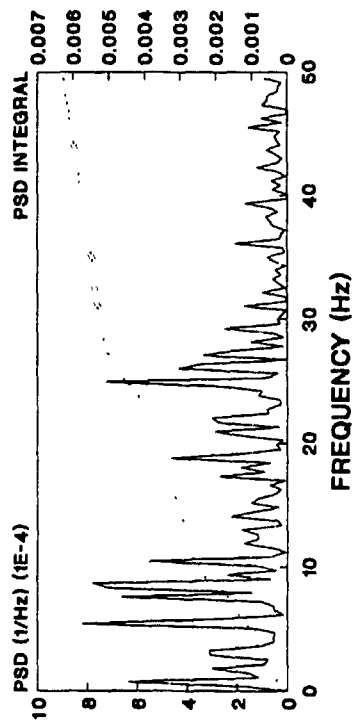
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

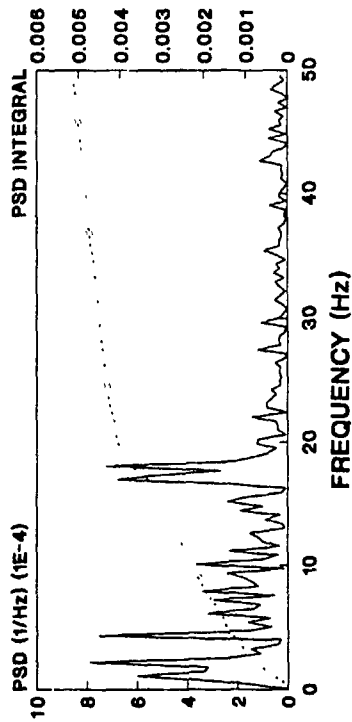
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

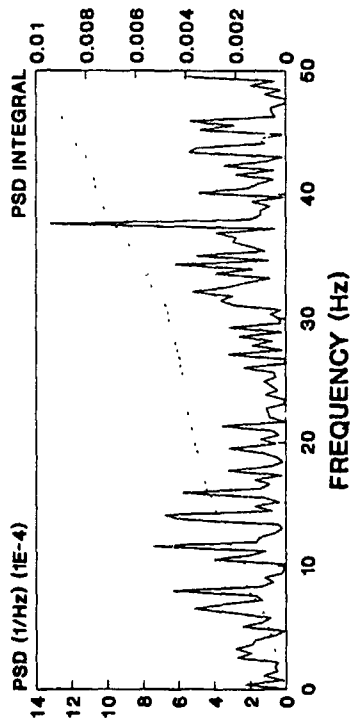
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

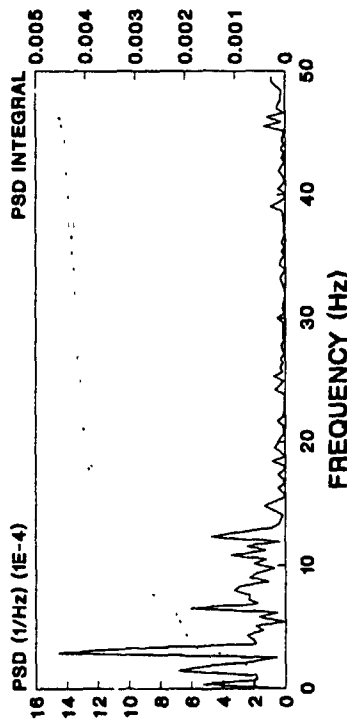
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

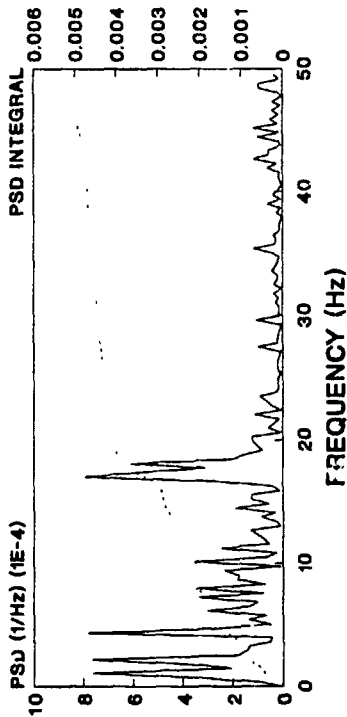
MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

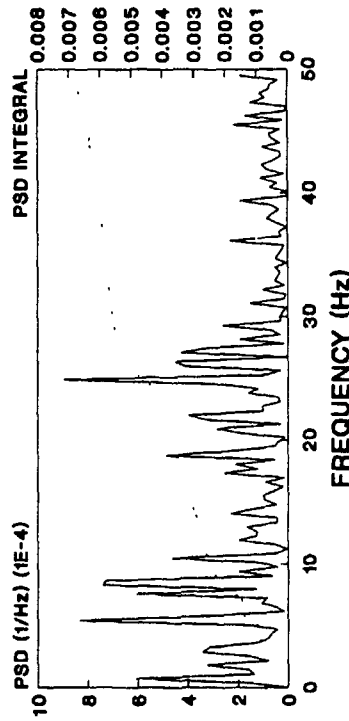
MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

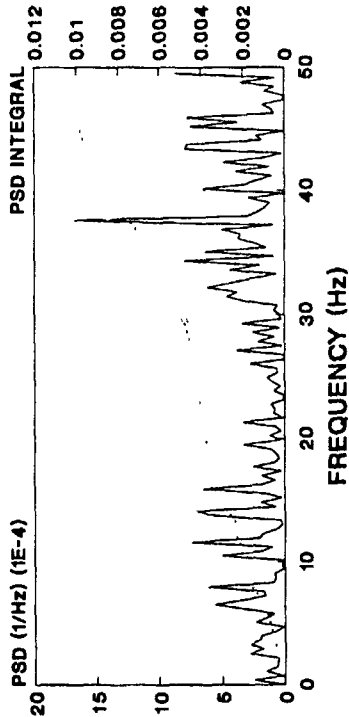
MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 000

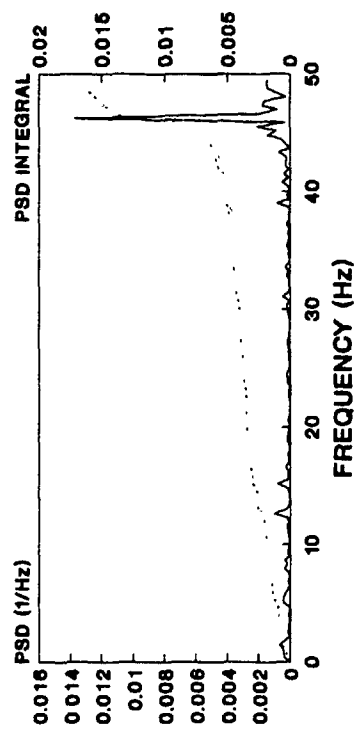
MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

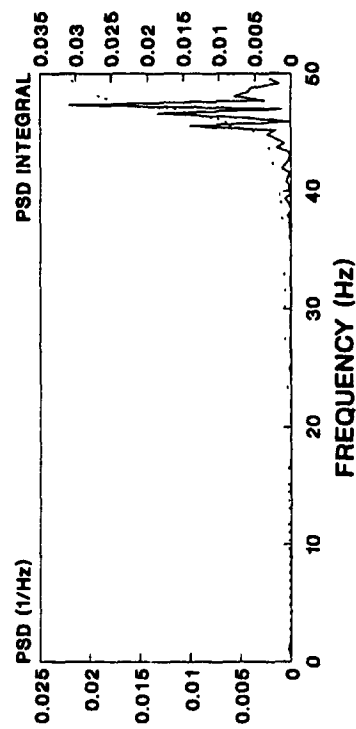
OCTOGON - HT 10.0 - THETA 00 - AZ 000

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



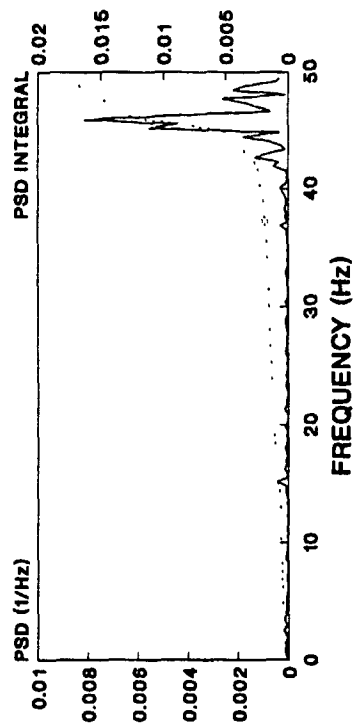
OCT08ON - HT 10.0 - THETA 00 - AZ 000

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



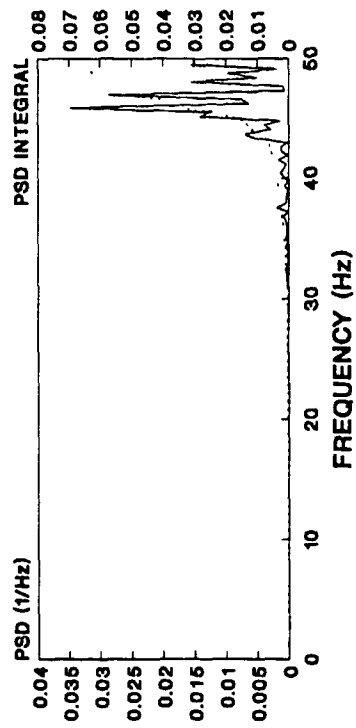
OCT08ON - HT 10.0 - THETA 00 - AZ 000

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



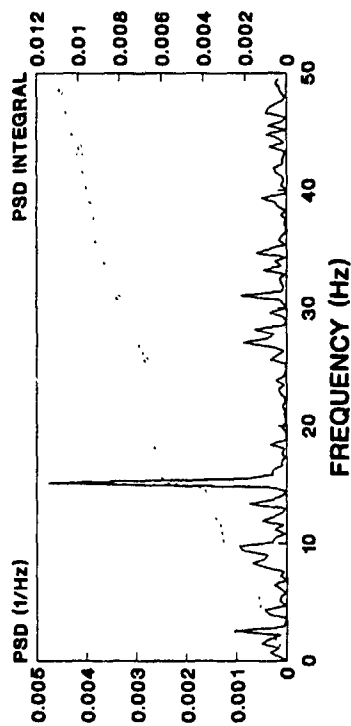
OCT08ON - HT 10.0 - THETA 00 - AZ 000

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



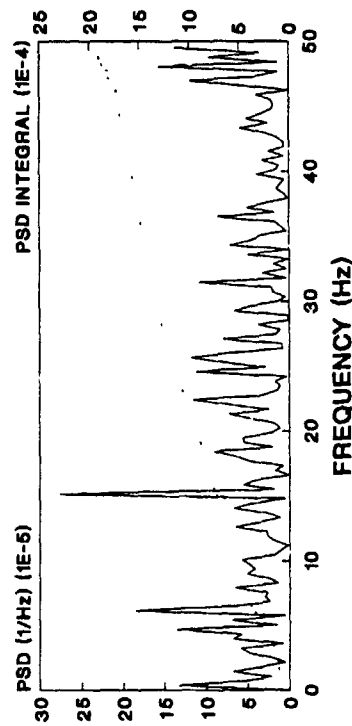
OCT08ON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



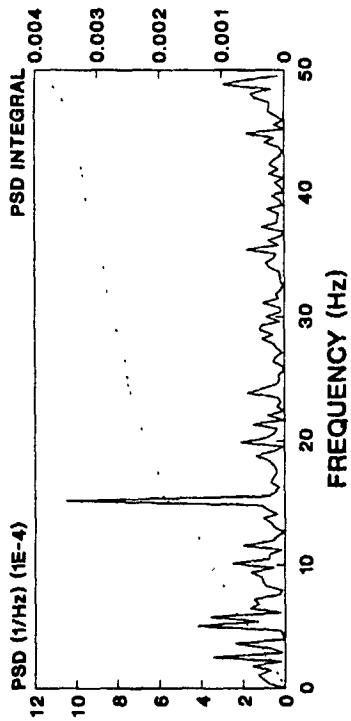
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



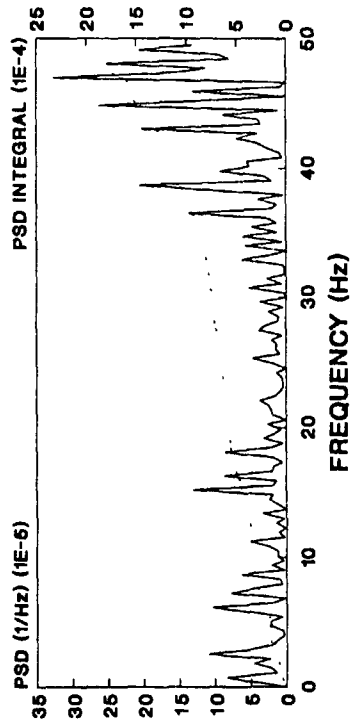
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



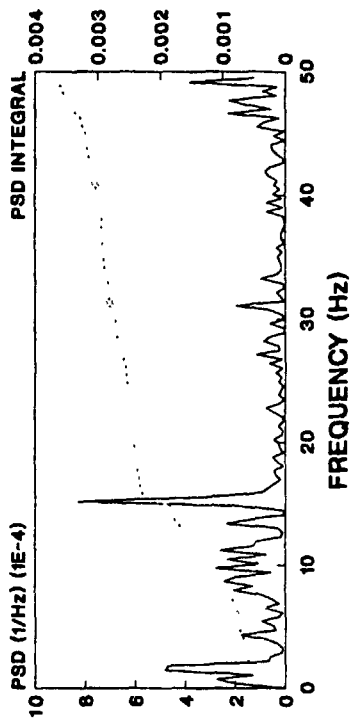
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



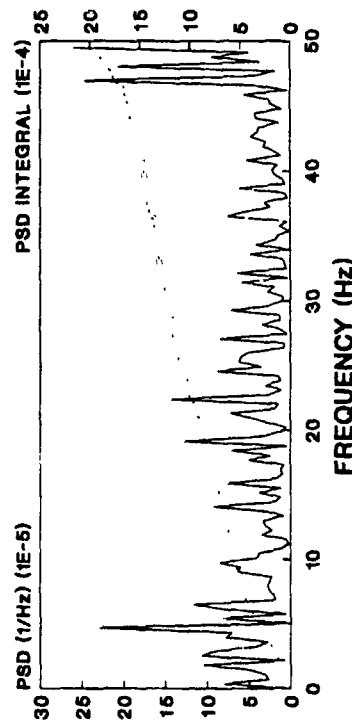
OCTOGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



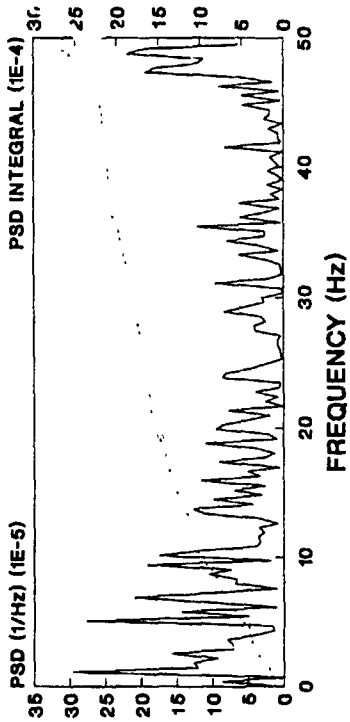
OCTOGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



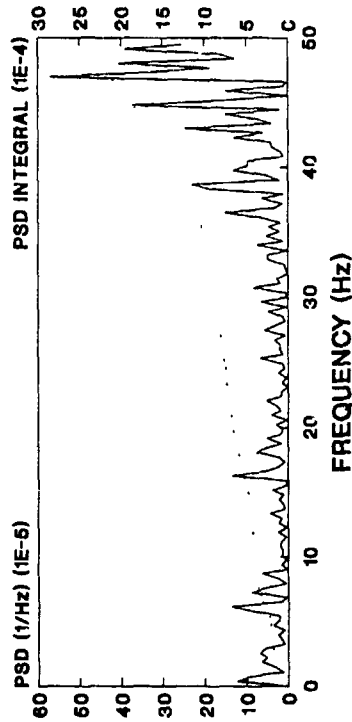
OCTOGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



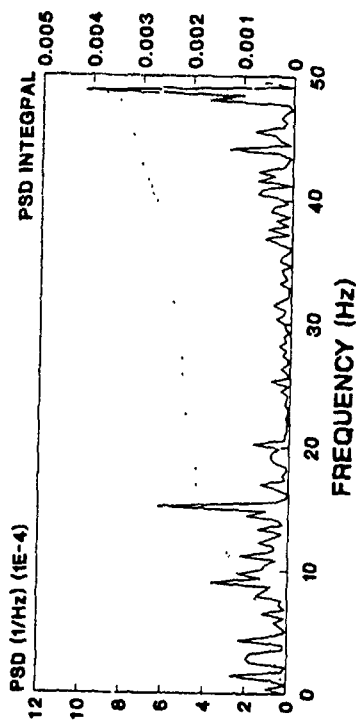
OCTOGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



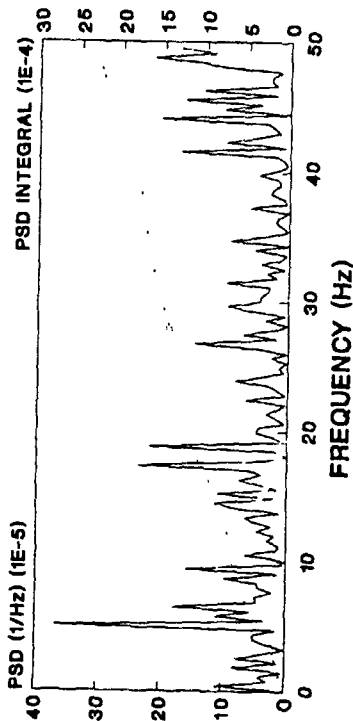
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



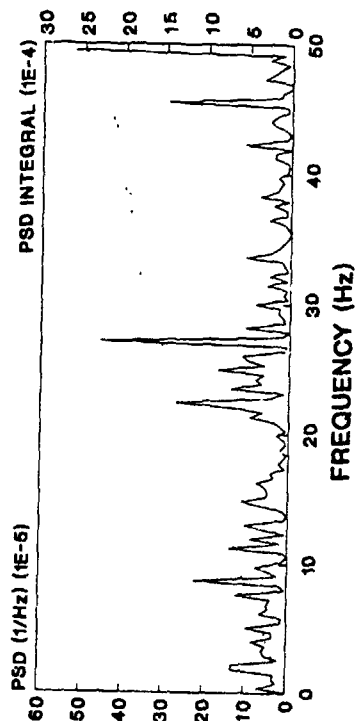
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



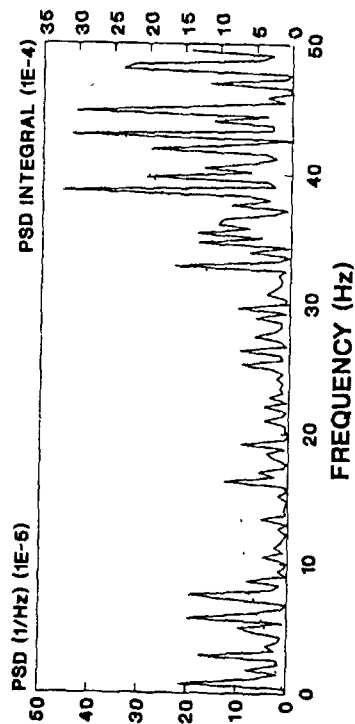
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



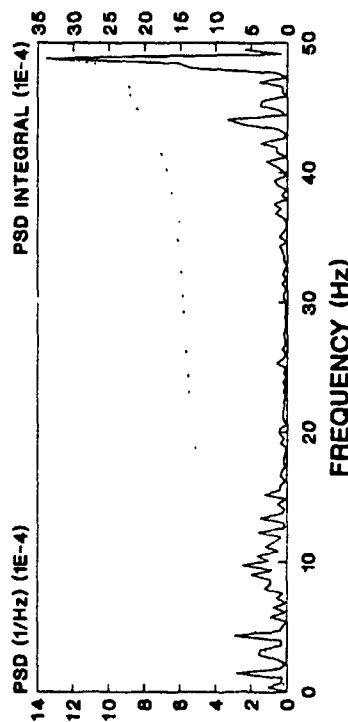
OCTOGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 030

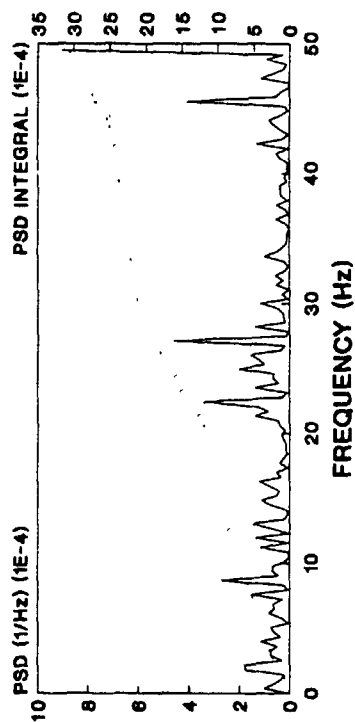
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

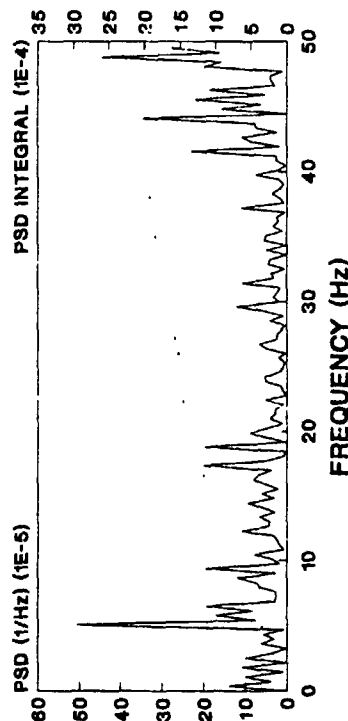
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

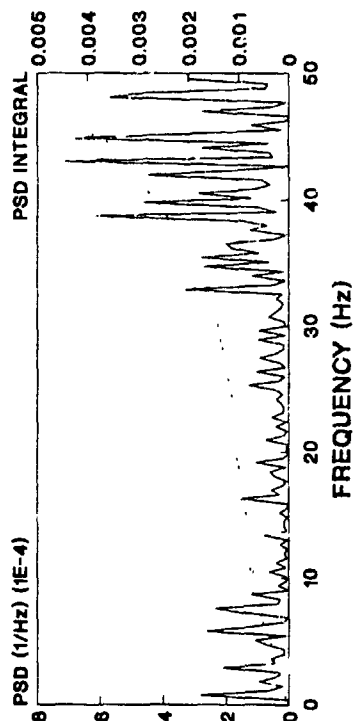
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

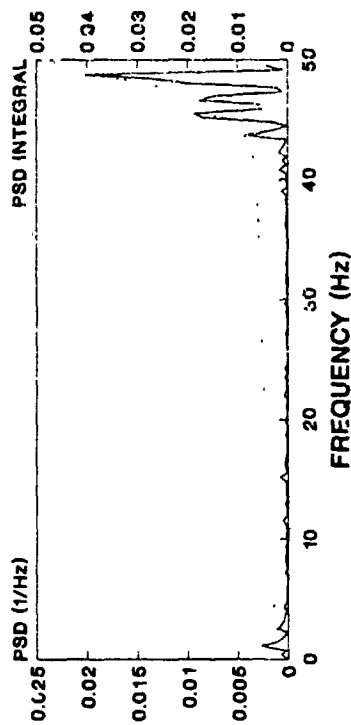
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

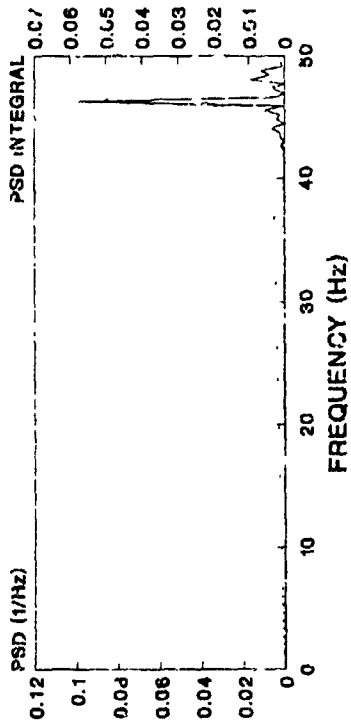
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD
- - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

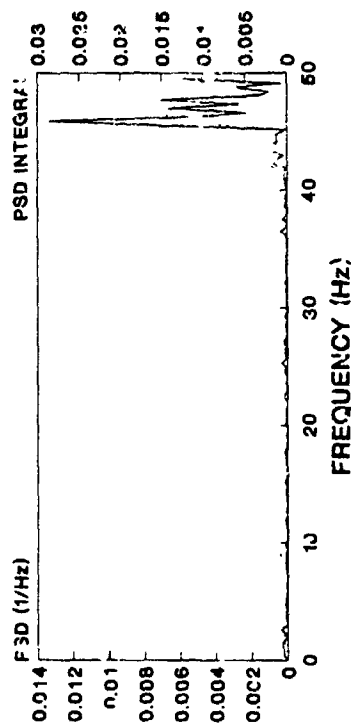
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD
- - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

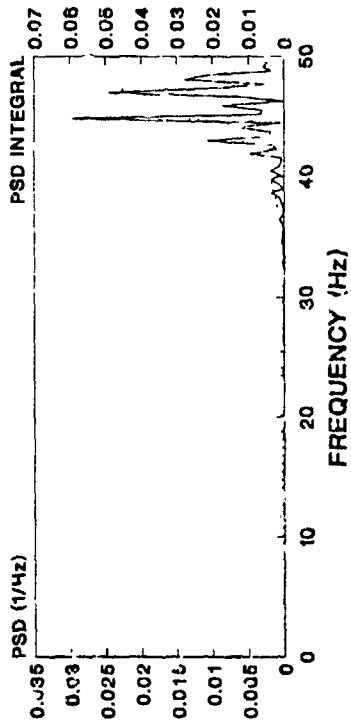
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD
- - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

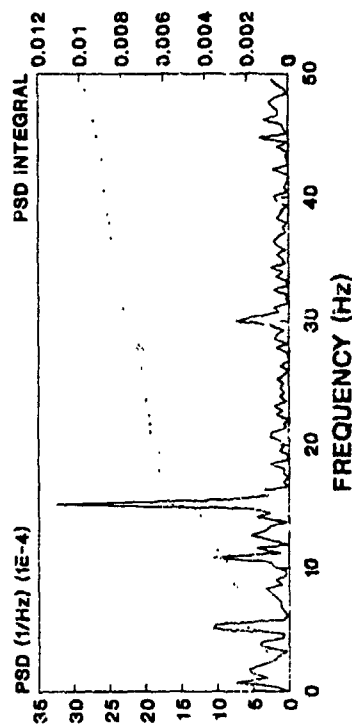
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD
- - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 030

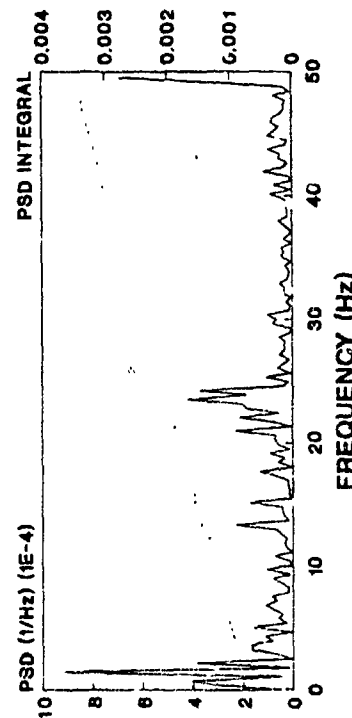
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

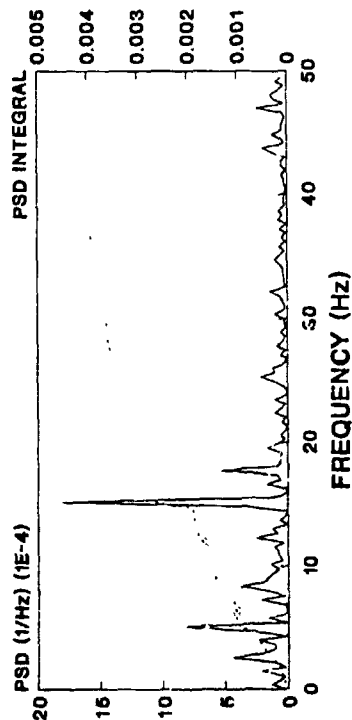
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

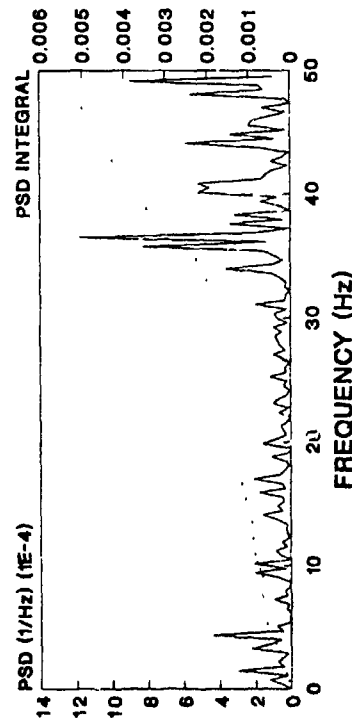
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

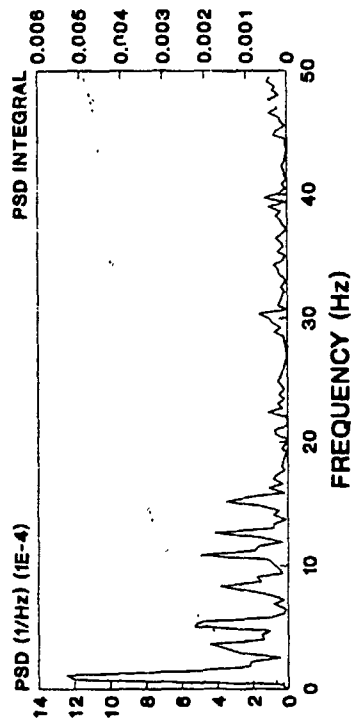
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

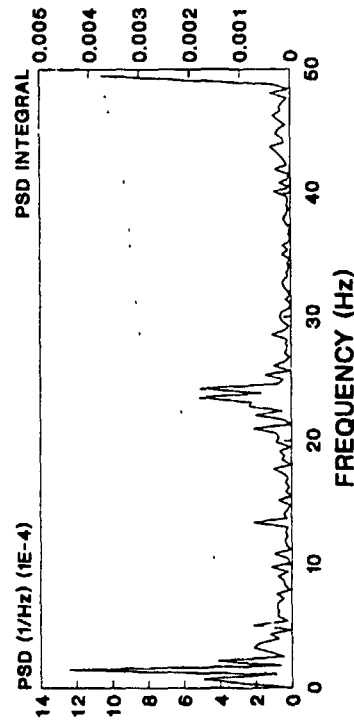
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

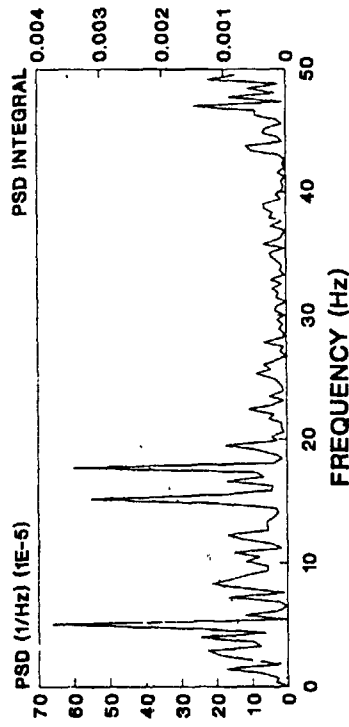
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

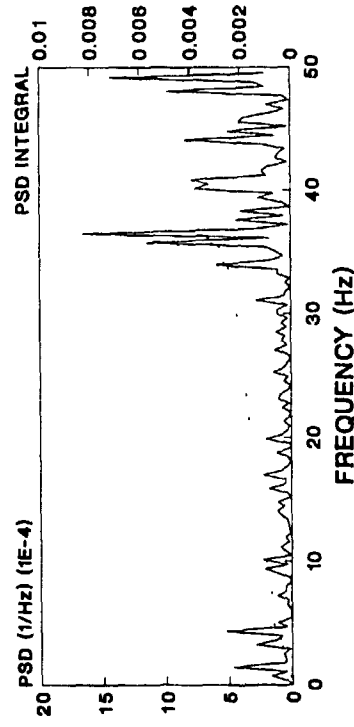
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

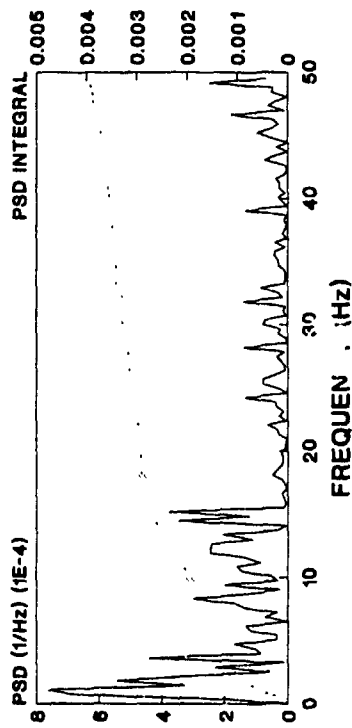
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

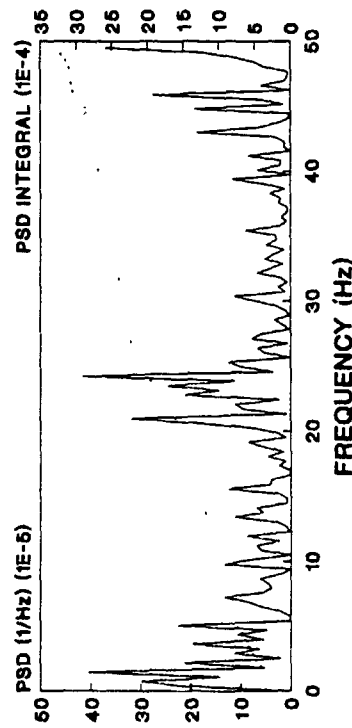
OCTOGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



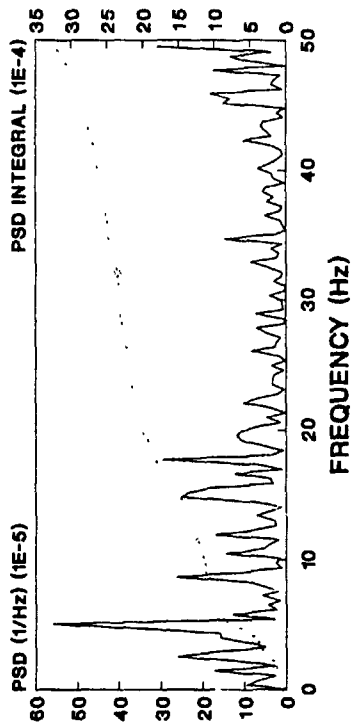
OCTOGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



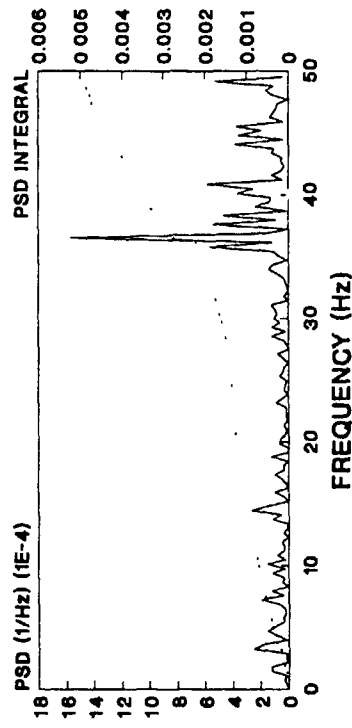
OCTOGON - HT 10.0 - THETA 00 - AZ 046

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



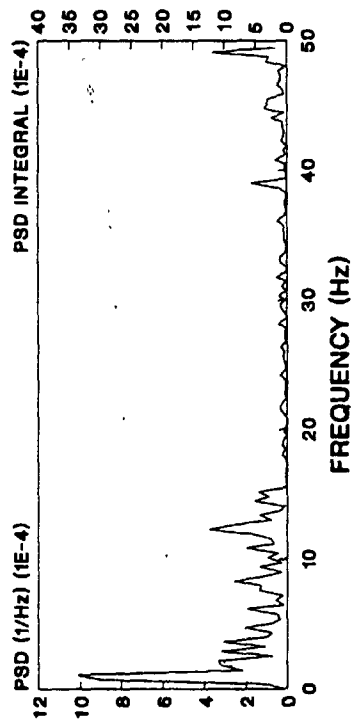
OCTOGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 045

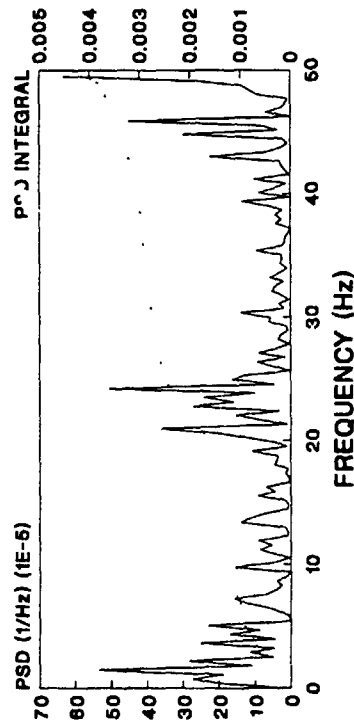
MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

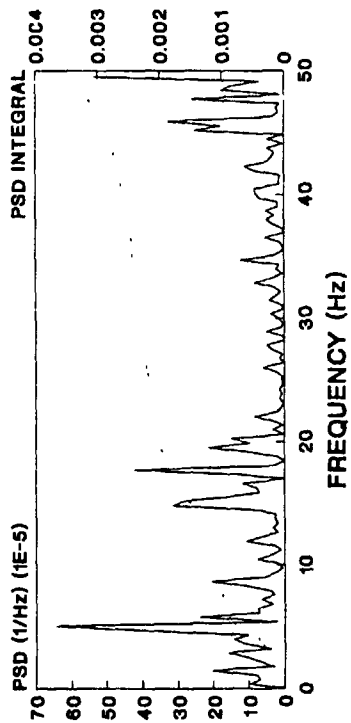
MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

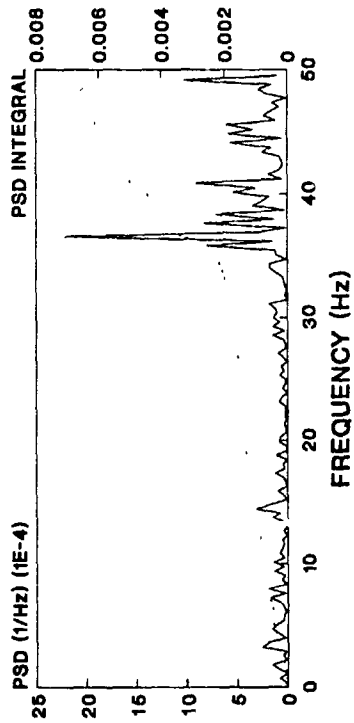
MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 045

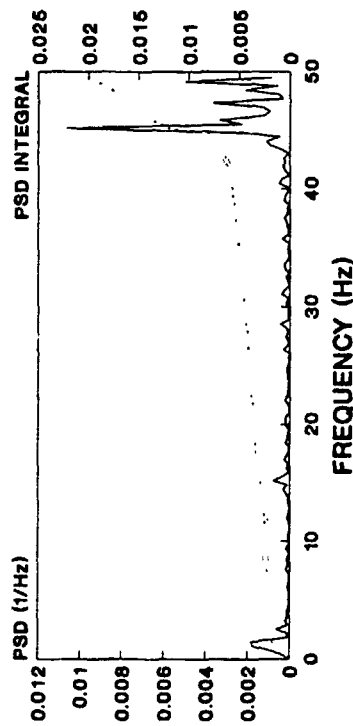
MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

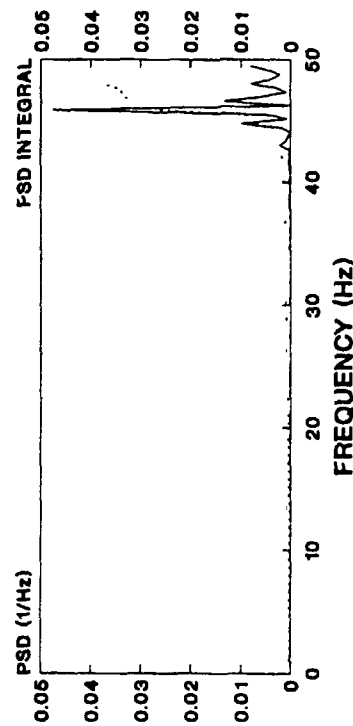
OCTOGON - HT 10.0 - THETA 00 - AZ 045

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



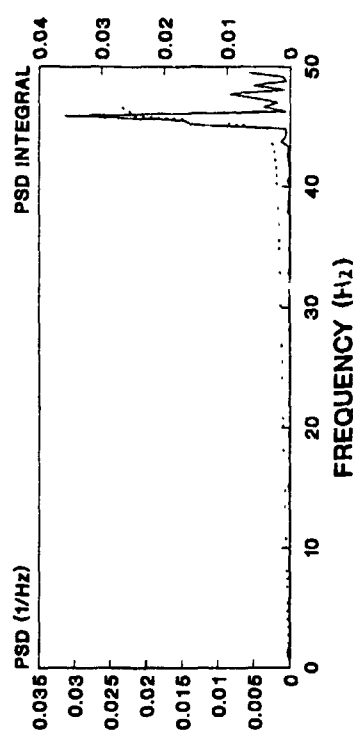
OCTOGON - HT 10.0 - THETA 00 - AZ 046

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



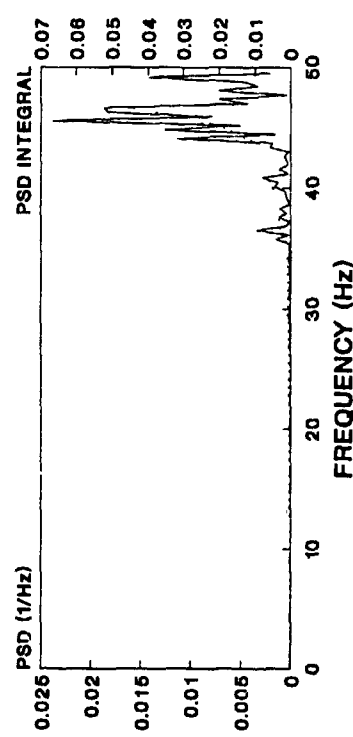
OCTOGON - HT 10.0 - THETA 00 - AZ 046

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



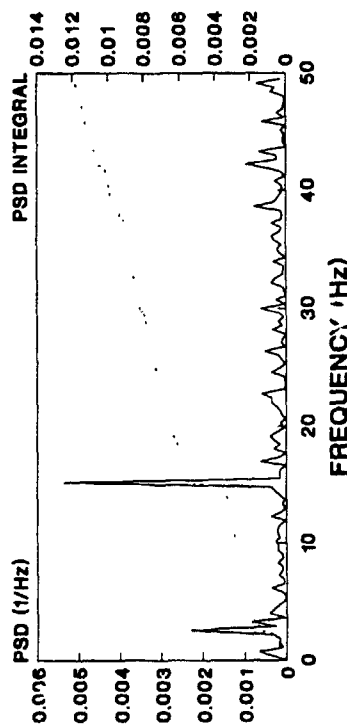
OCTOGON - HT 10.0 - THETA 00 - AZ 046

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 046

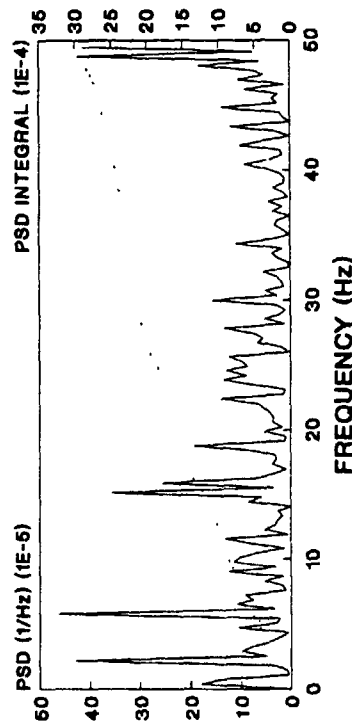
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

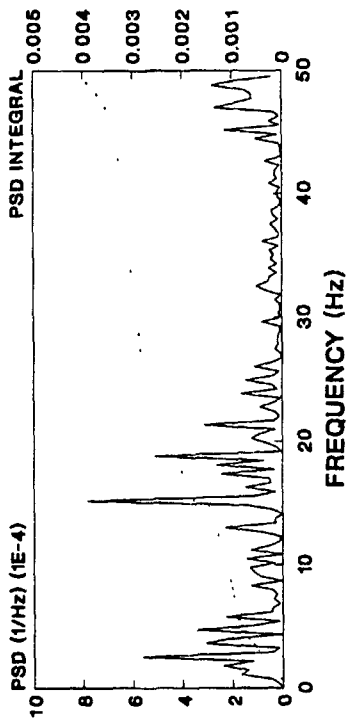
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

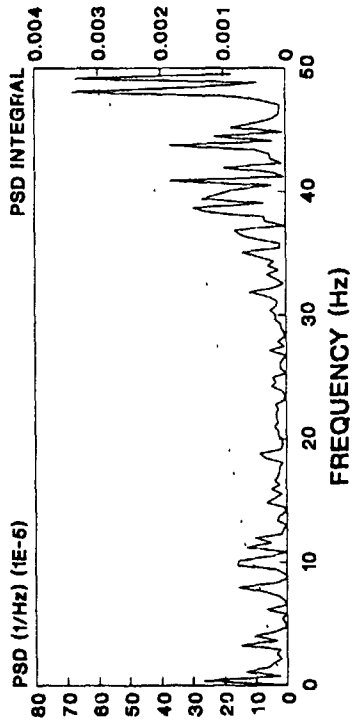
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

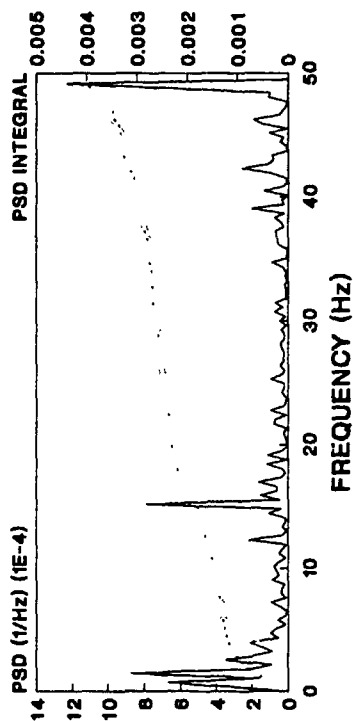
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

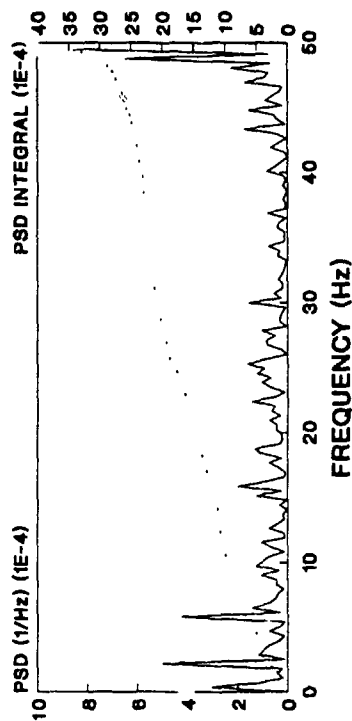
MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOSON - HT 10.0 - THETA 00 - AZ 060

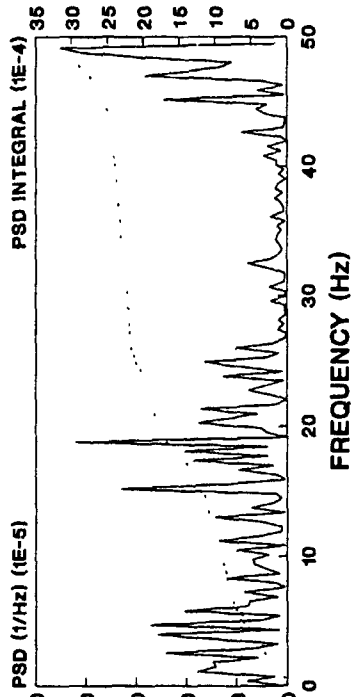
MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOSON - HT 10.0 - THETA 00 - AZ 060

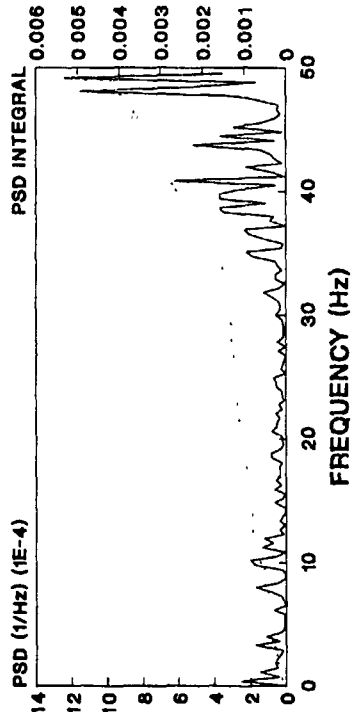
MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOSON - HT 10.0 - THETA 00 - AZ 060

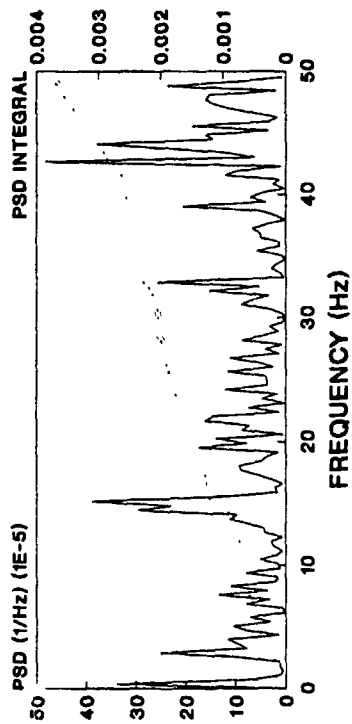
MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOSON - HT 10.0 - THETA 00 - AZ 060

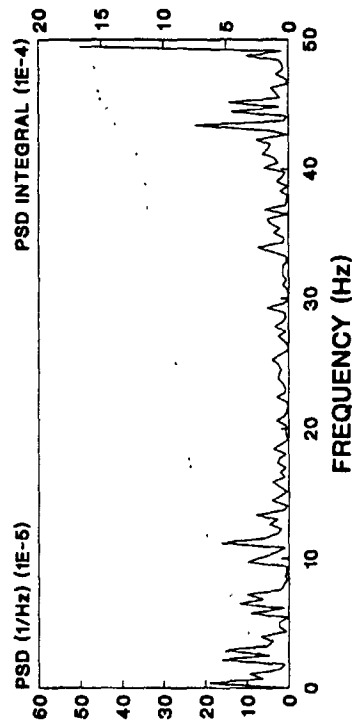
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

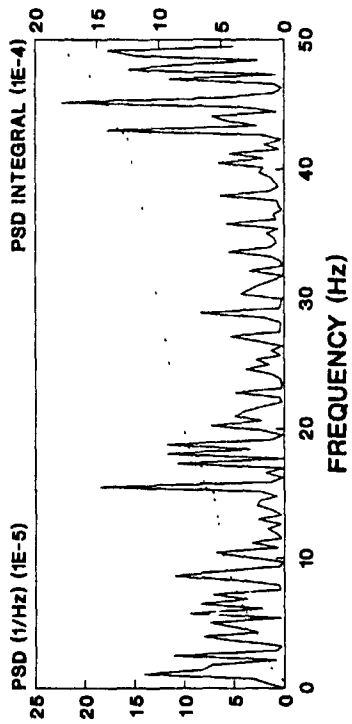
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

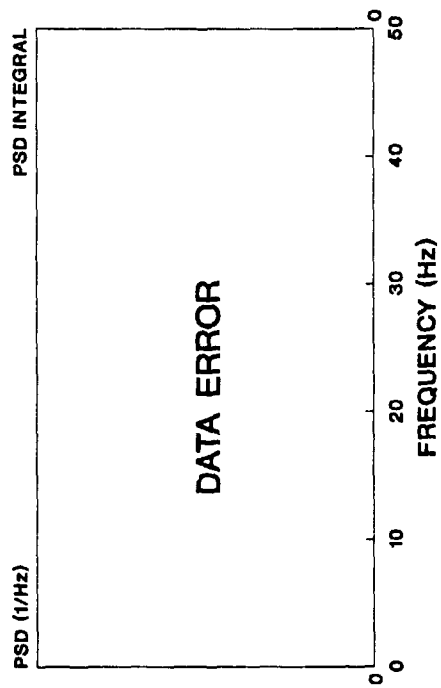
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

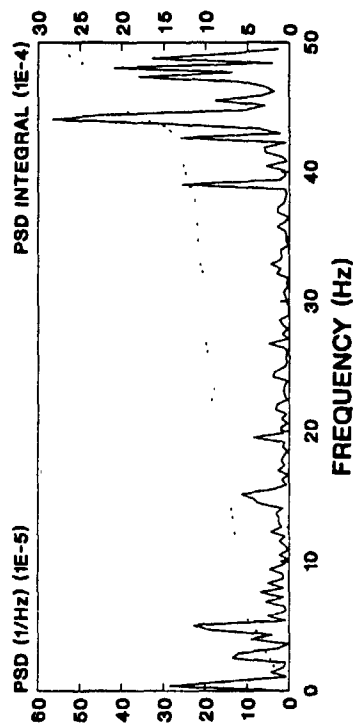
OCTOGON - HT 10.0 - THETA 00 - AZ 080

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 080

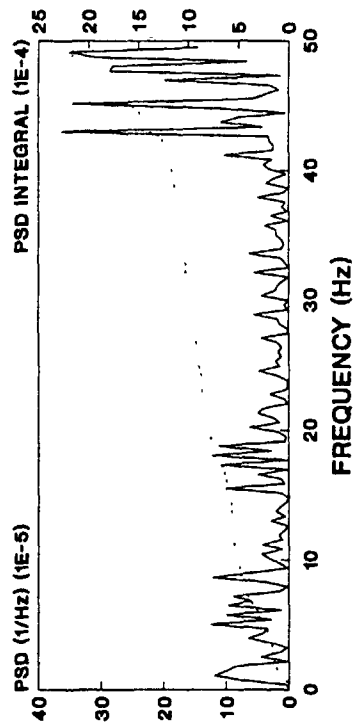
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

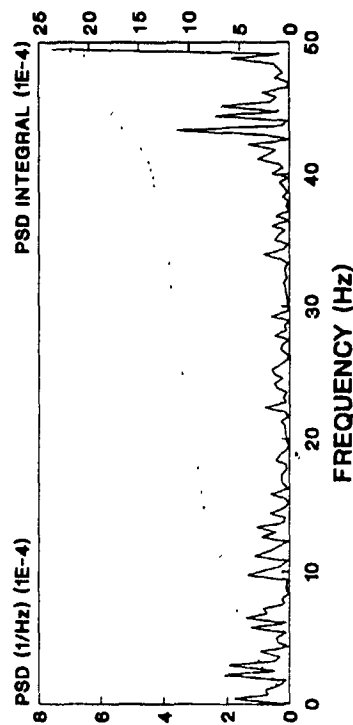
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 080

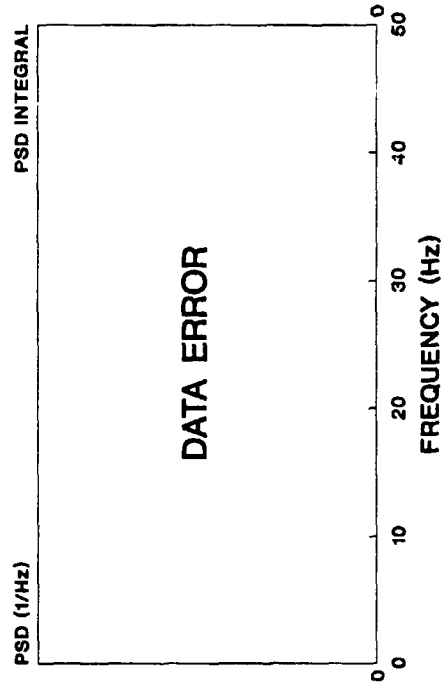
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

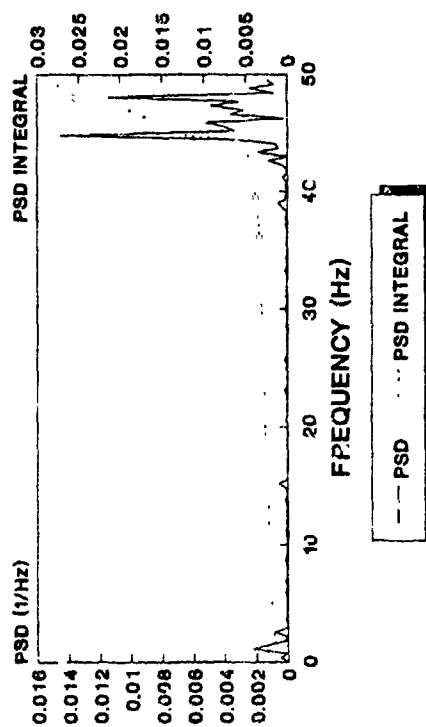
OCTOGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



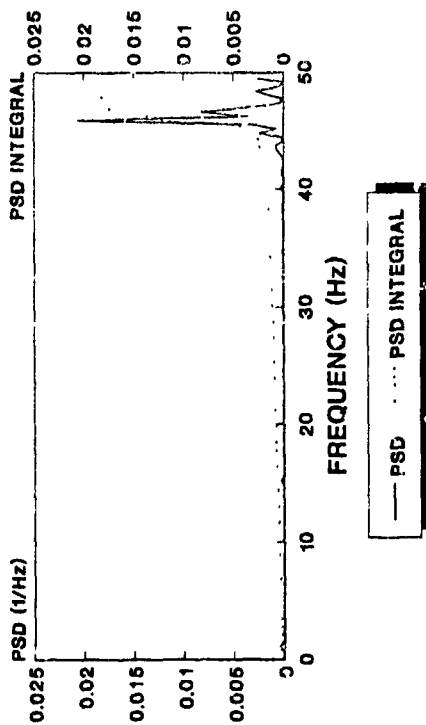
OCTOGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



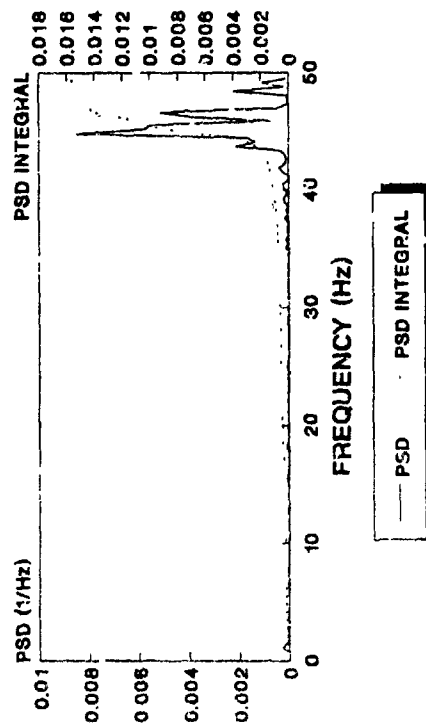
OCTOBER - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



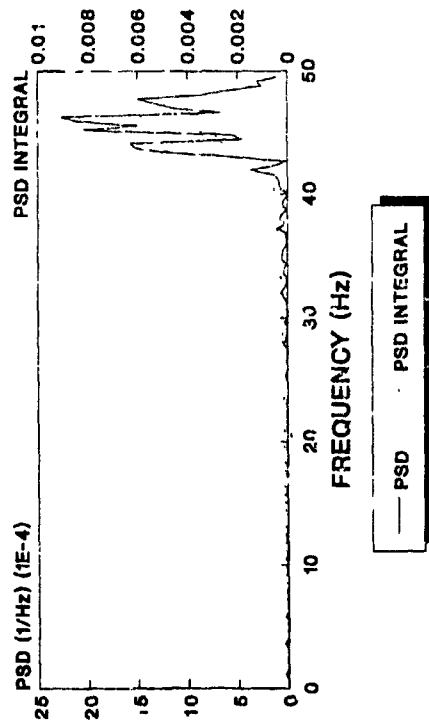
OCTOBER - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



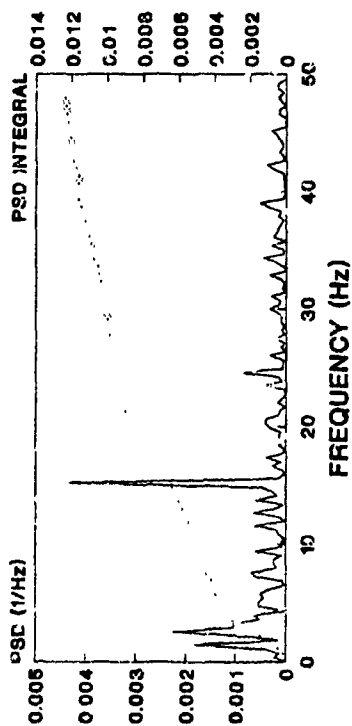
OCTOBER - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



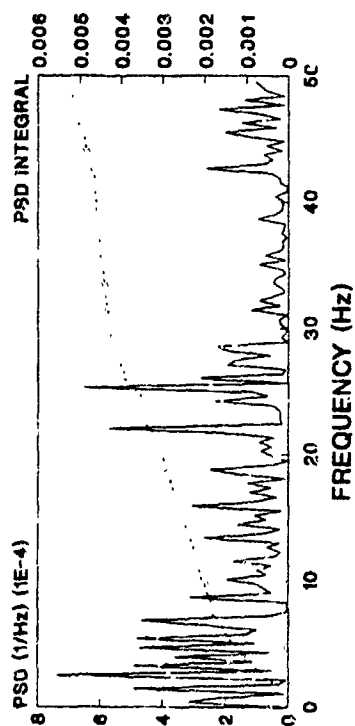
OCTOBER - HT 10.0 - THETA 00 - AZ 090

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



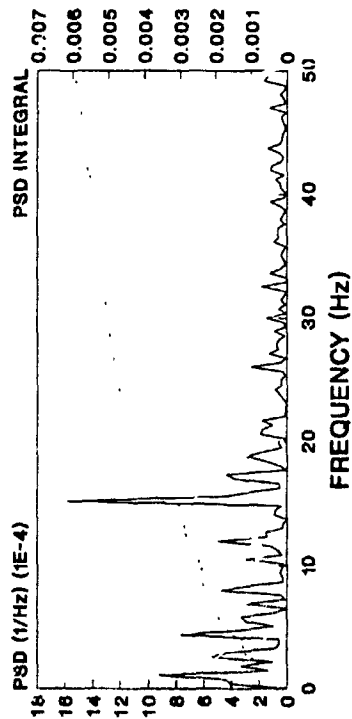
OCTOGON - HT 10.0 - THETA 00 - AZ 090

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



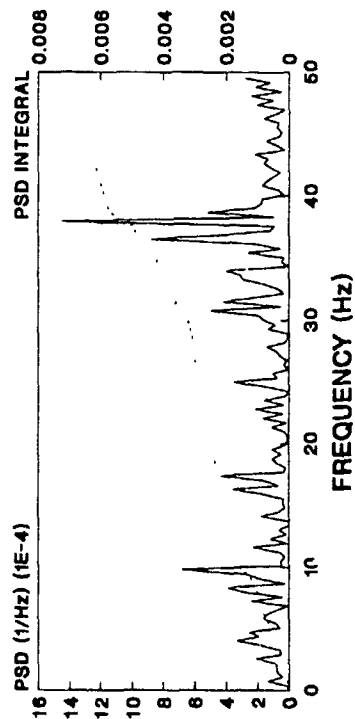
OCTOGON - HT 10.0 - THETA 00 - AZ 090

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



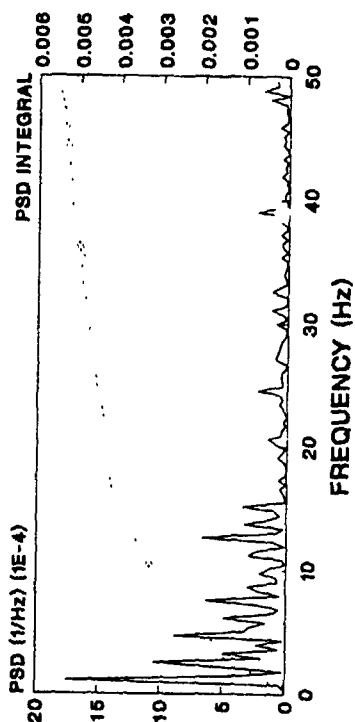
OCTOGON - HT 10.0 - THETA 00 - AZ 090

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 090

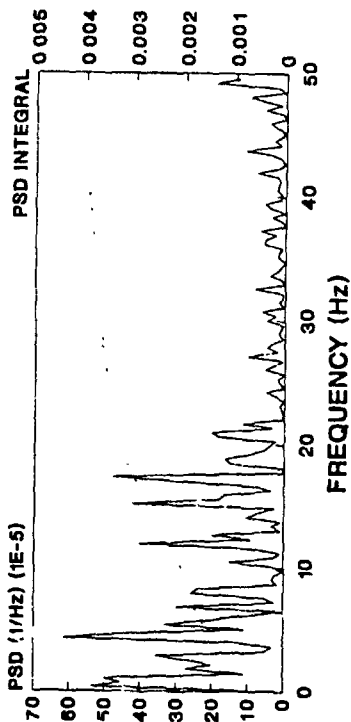
MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

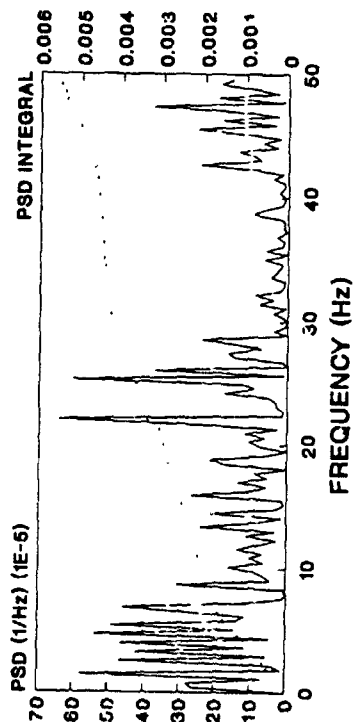
MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

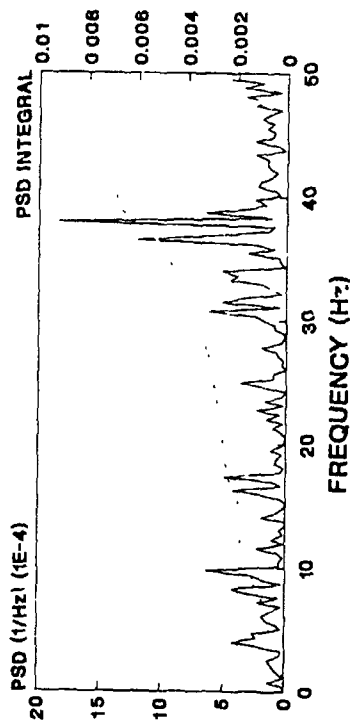
MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

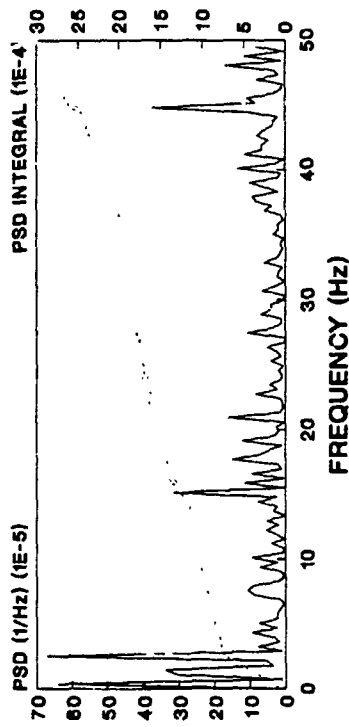
MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

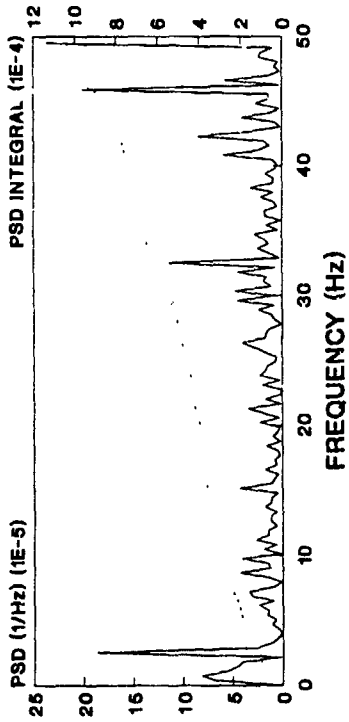
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

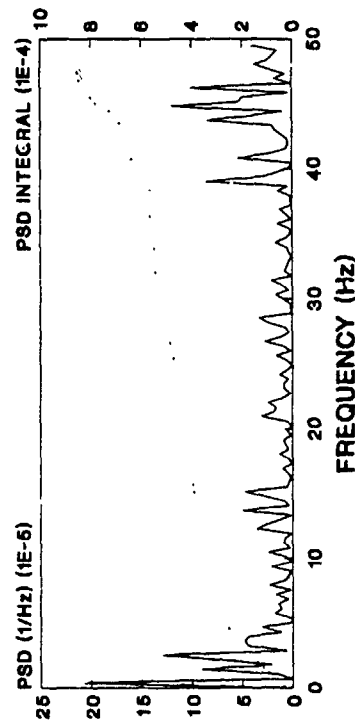
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

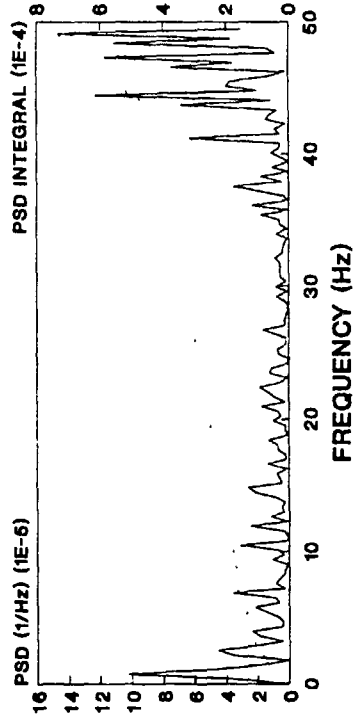
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

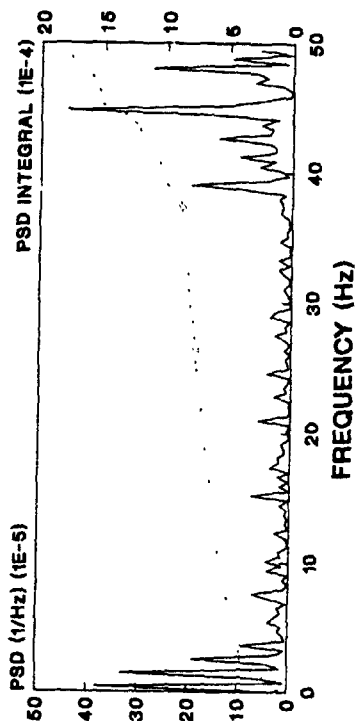
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

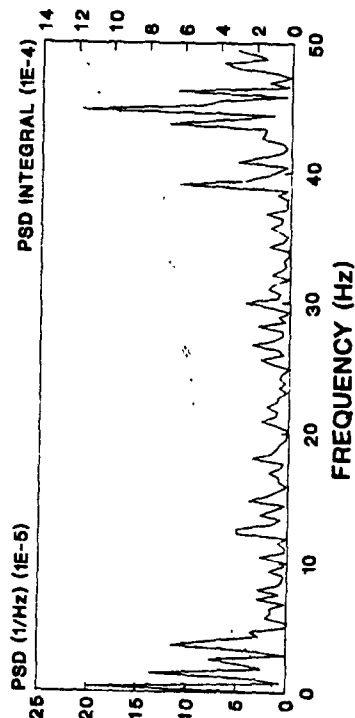
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

OCTOGON HT 10.0 - THETA 00 - AZ 090

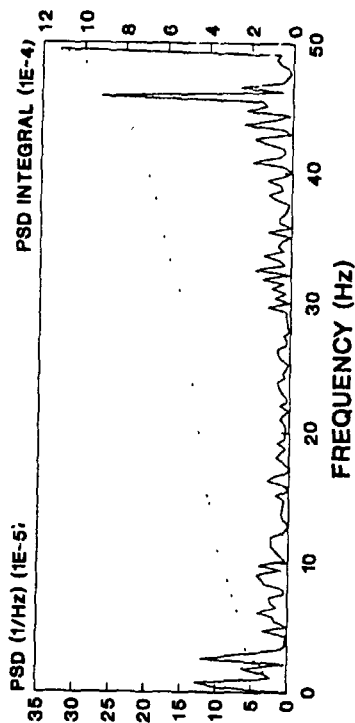
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

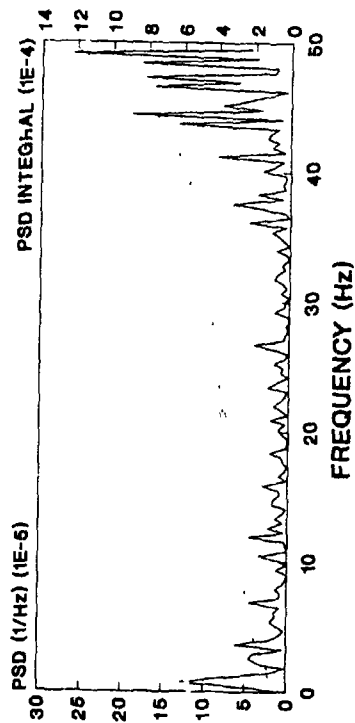
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

OCTOGON - HT 10.0 - THETA 00 - AZ 090

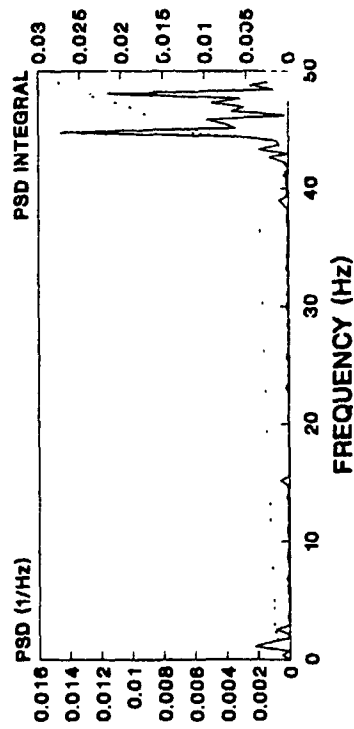
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

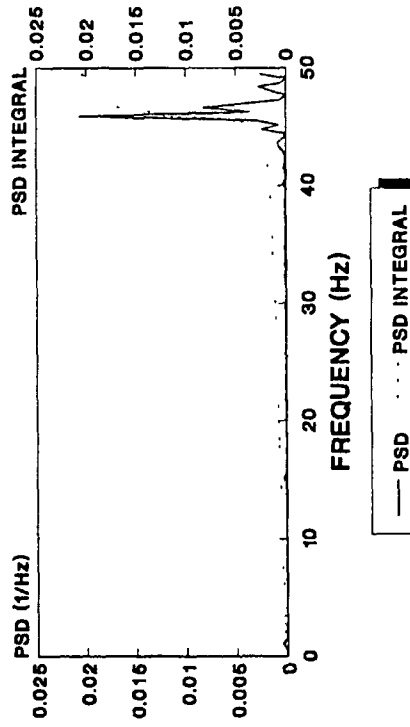
OCTOGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



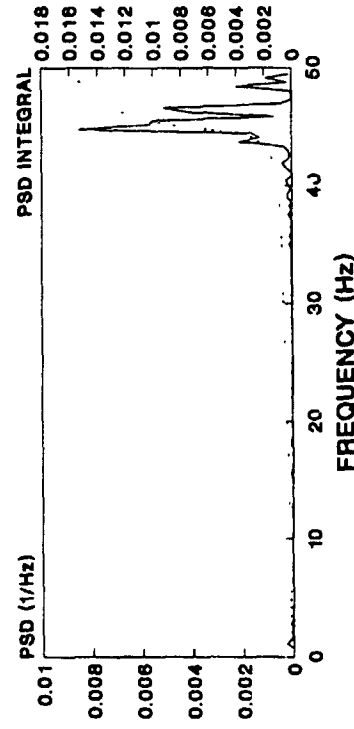
OCTOGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



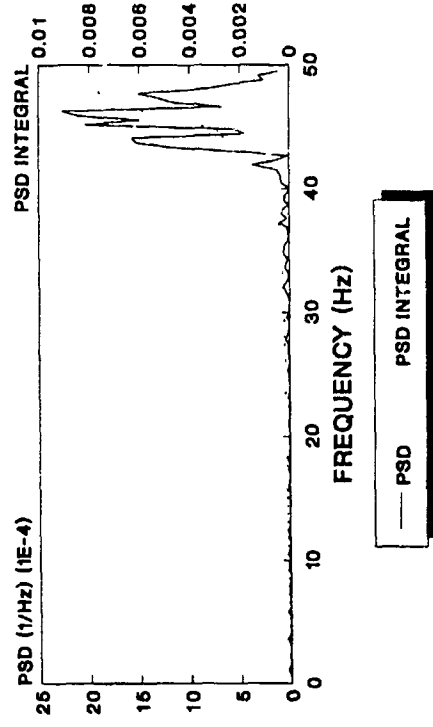
OCTOGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



OCTOGON - HT 10.0 - THETA 00 - AZ 090

DATA REPORT

SHAPE:	HEXAGON
DECLINATION [THETA (degrees)]:	0
DIMENSIONS [LxWxH (in)]:	8.0 x 8.0 x 10.0
WEIGHT (gm):	1615.0
TORSION FREQUENCY (Hz):	48
LATERAL (SIDE BEND) FREQUENCY (Hz):	52
NORMAL (AFT BEND) FREQUENCY (Hz):	51
AZIMUTHS (degrees):	0, 30, 45, 60, 90

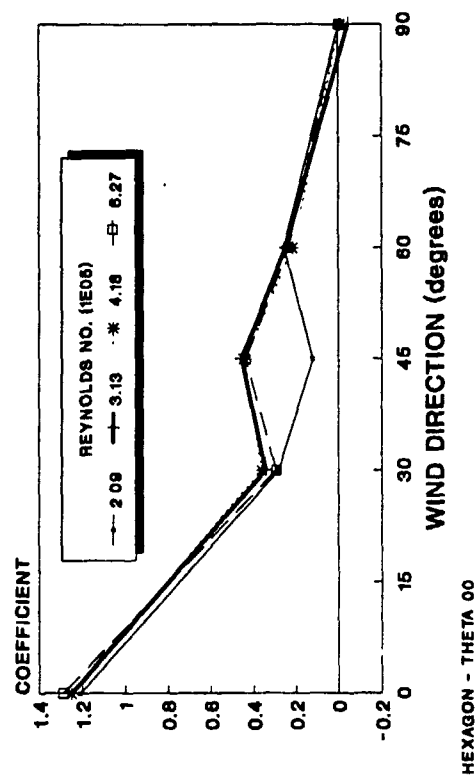
GRAPH CORRECTIONS:

- The mean value of the **ROLL** moment coefficients should be divided by 12.
- The PSD and PSD Integral values of the **ROLL** moment coefficients should be divided by 144.

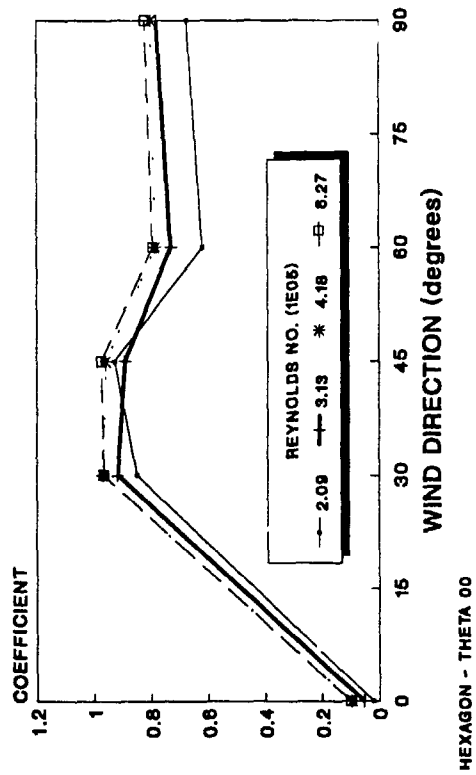
OBSERVATIONS:

- Single frequency shedding signature not observed.
- A good multifrequency shed is seen in the lateral data at 0 degrees azimuth. The shedding is also seen in the roll data but is dwarfed by the natural frequencies near 50 Hz.
- Poor quality shedding can be seen in the lateral and roll data at 0 degrees azimuth, and in the lateral, normal, and roll data at 45 degrees azimuth.

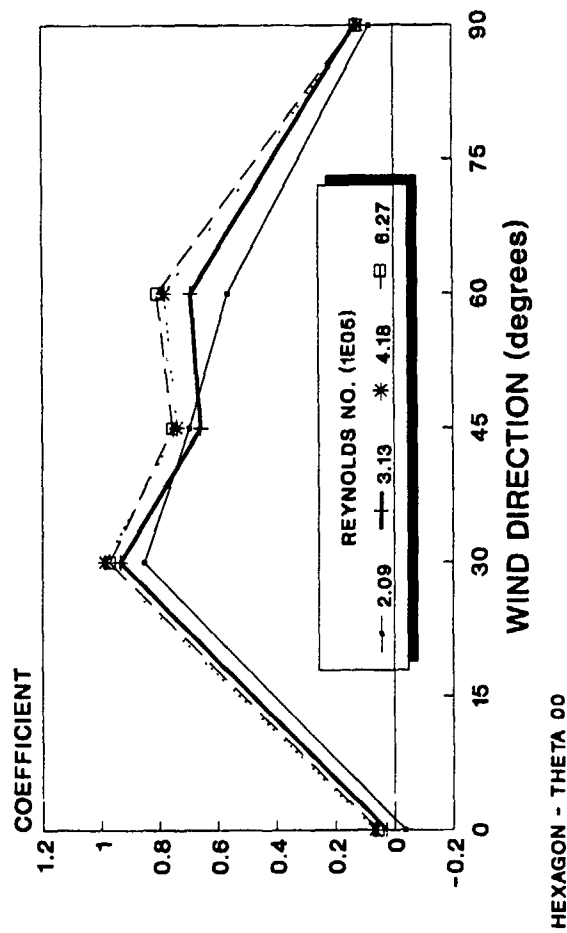
MEAN FORCE COEFFICIENT NORMAL DIRECTION



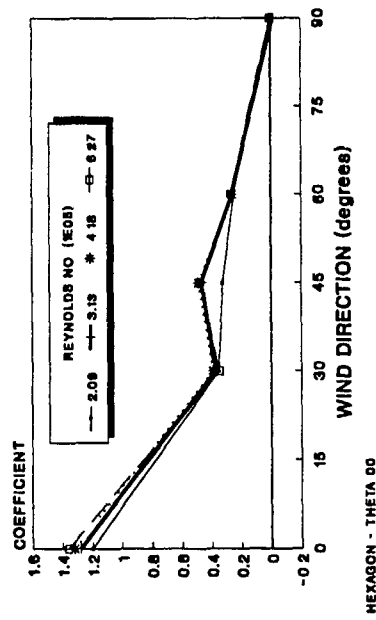
MEAN FORCE COEFFICIENT LATERAL DIRECTION



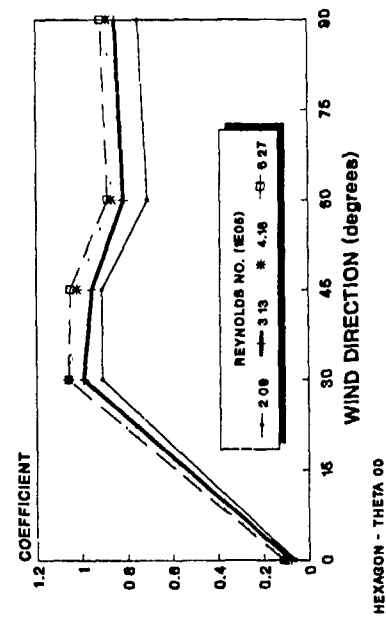
MEAN MOMENT COEFFICIENT ROLL DIRECTION



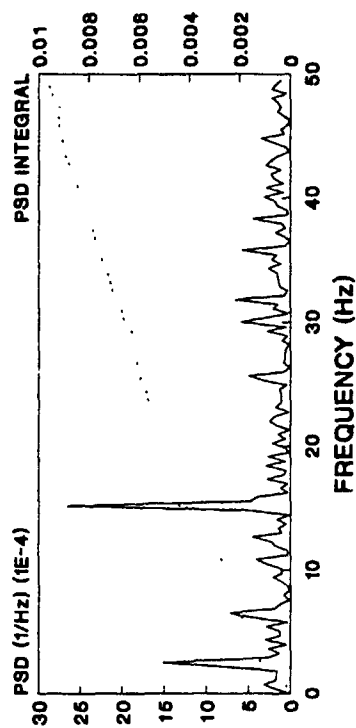
MEAN MOMENT COEFFICIENT NORMAL DIRECTION



MEAN MOMENT COEFFICIENT LATERAL DIRECTION



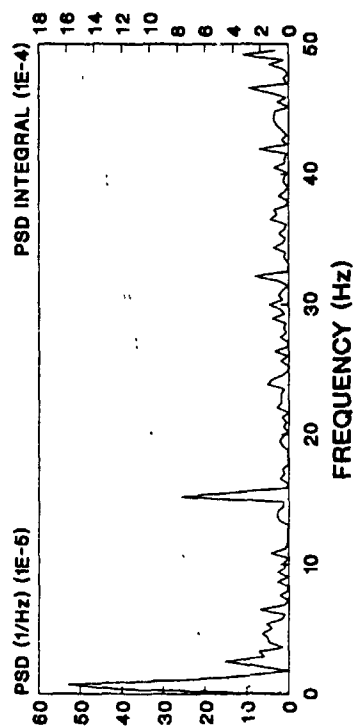
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

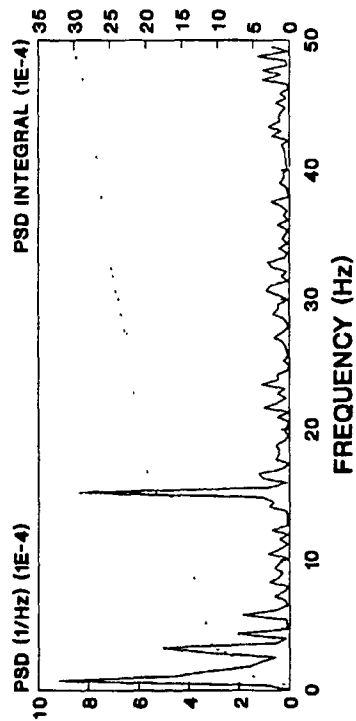
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

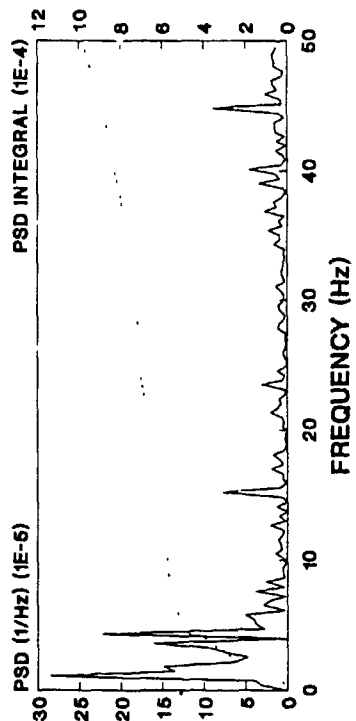
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

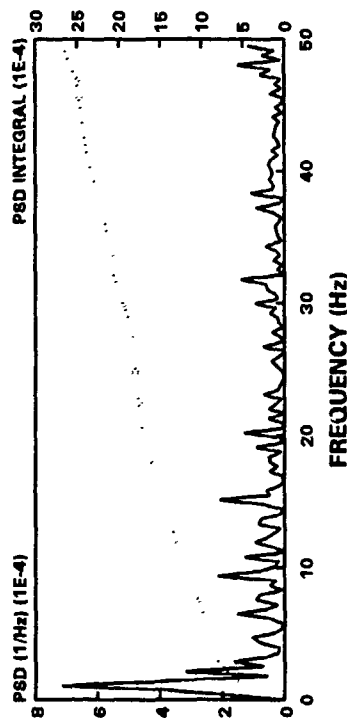
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

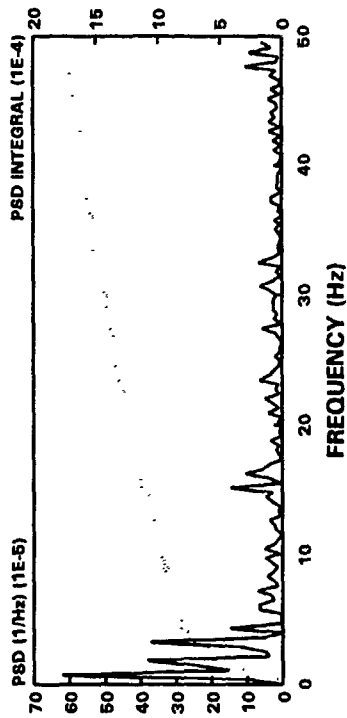
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

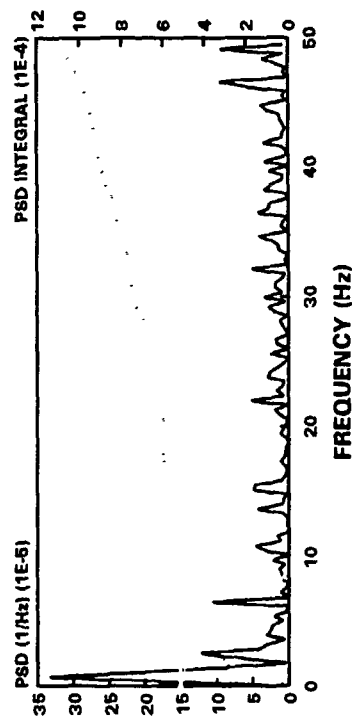
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

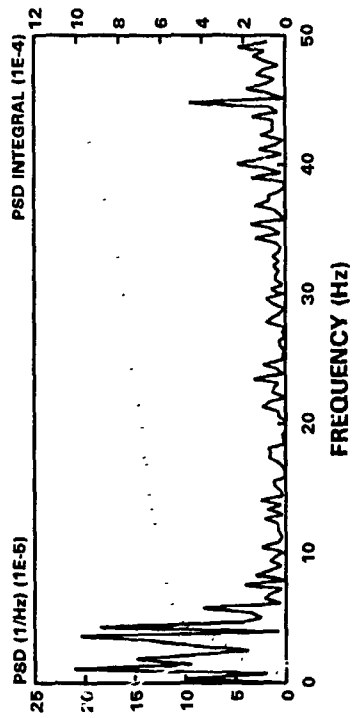
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

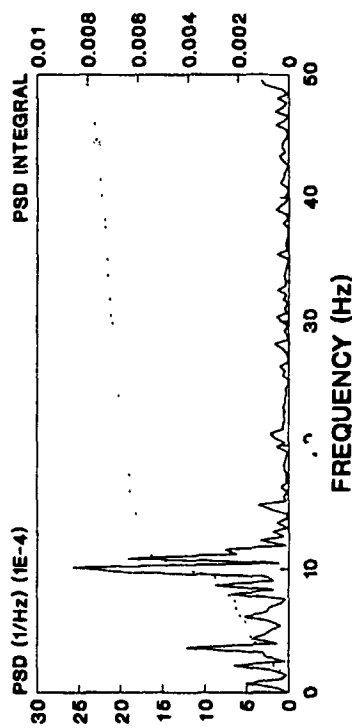
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD ... PSD INTEGRAL

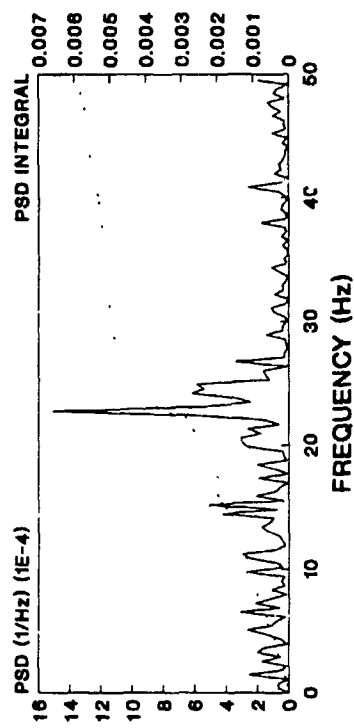
HEXAGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



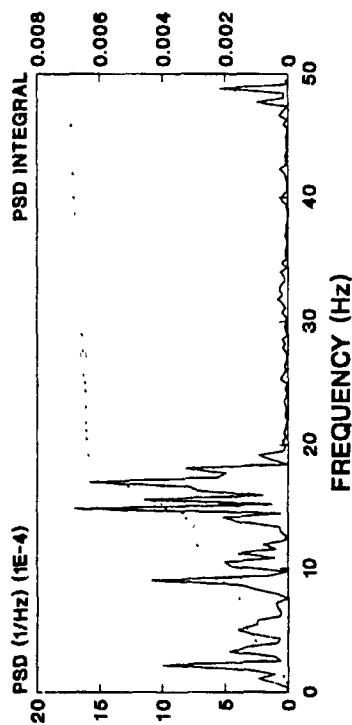
HEXAGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



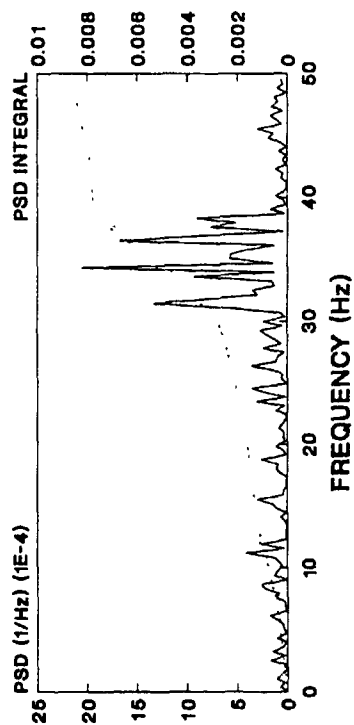
HEXAGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



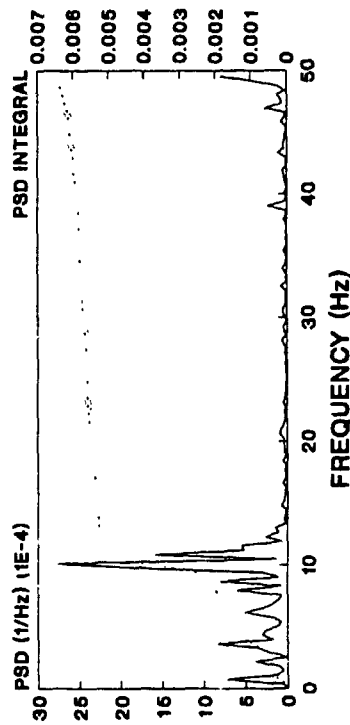
HEXAGON - HT 10.0 - THETA 00 - AZ 000

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



HEXAGON - HT 10.0 - THETA 00 - AZ 000

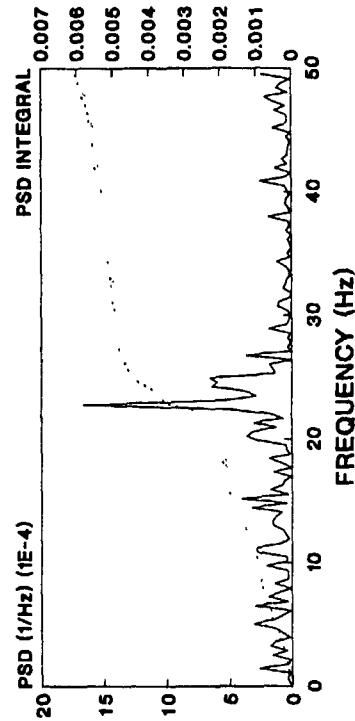
MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

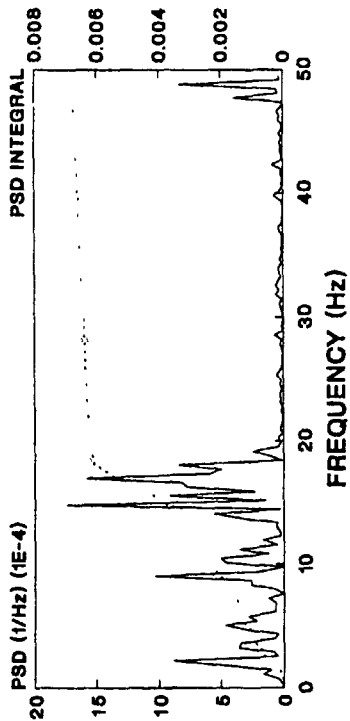
MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

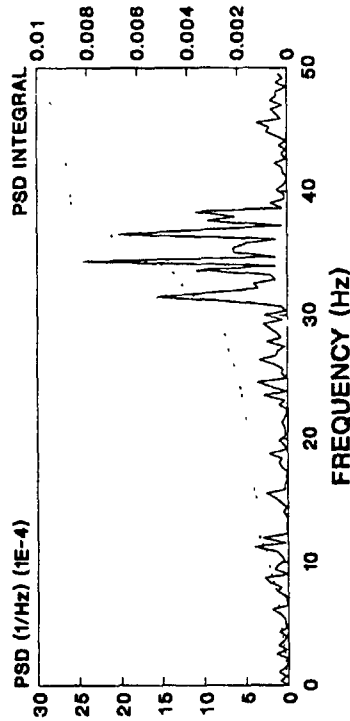
MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

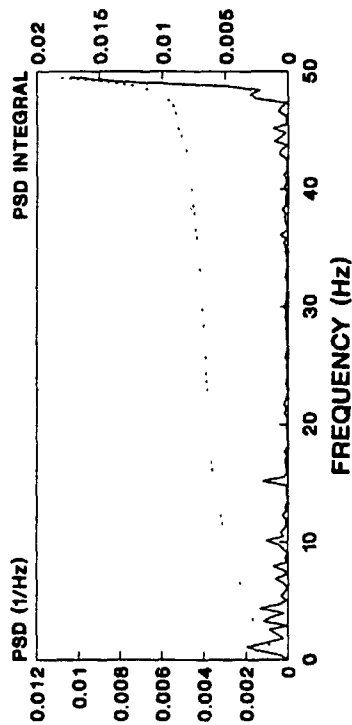
MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

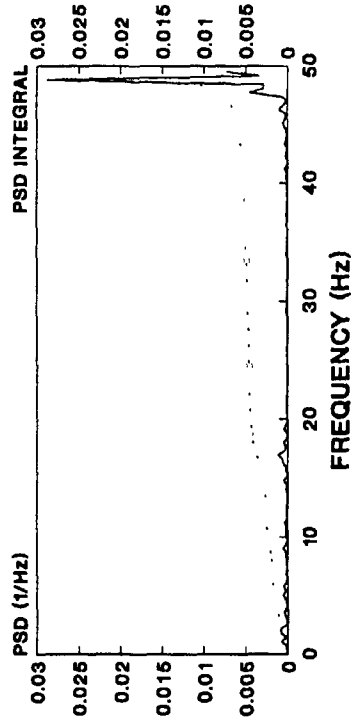
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

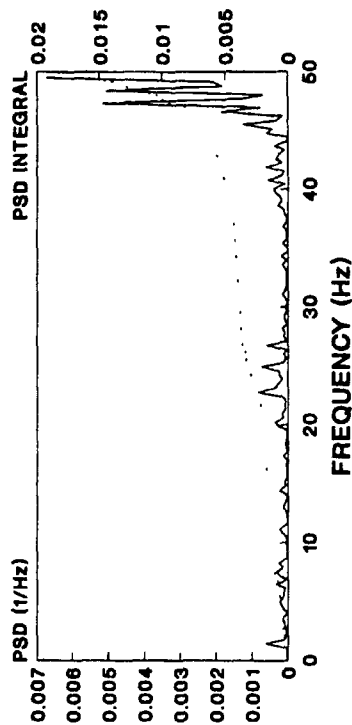
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

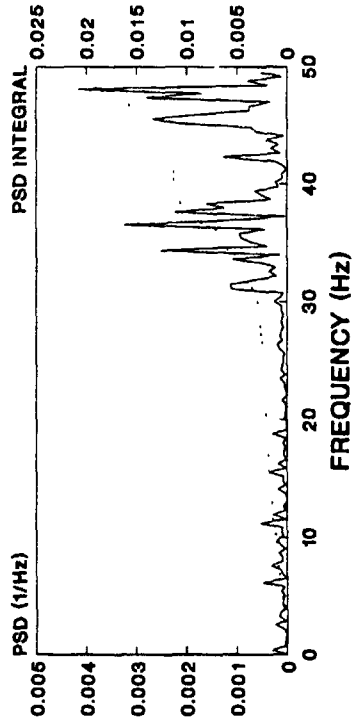
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

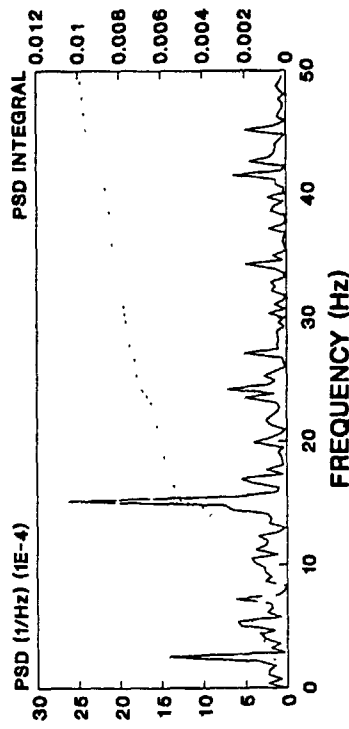
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 000

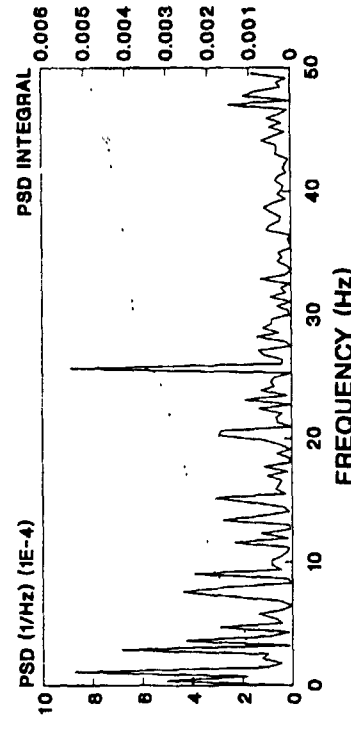
FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

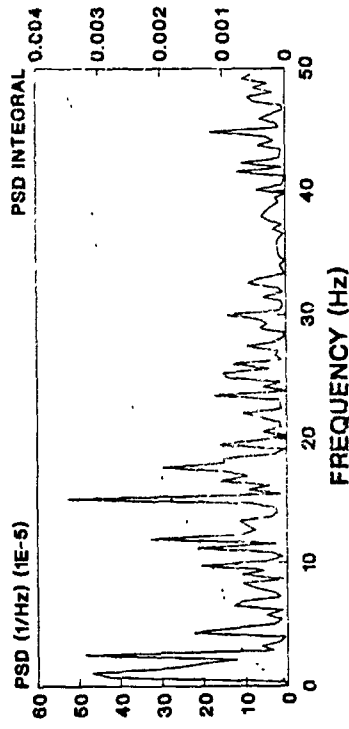
FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

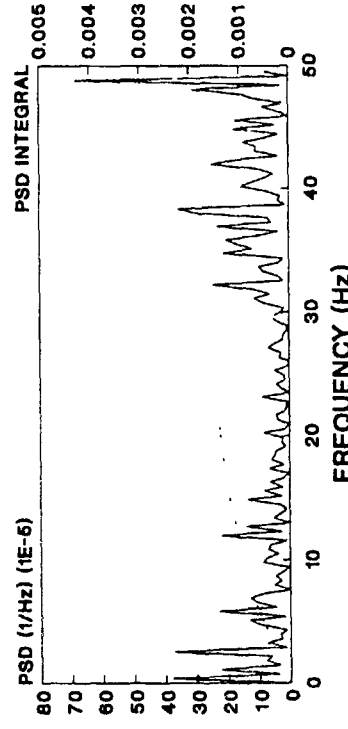
FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

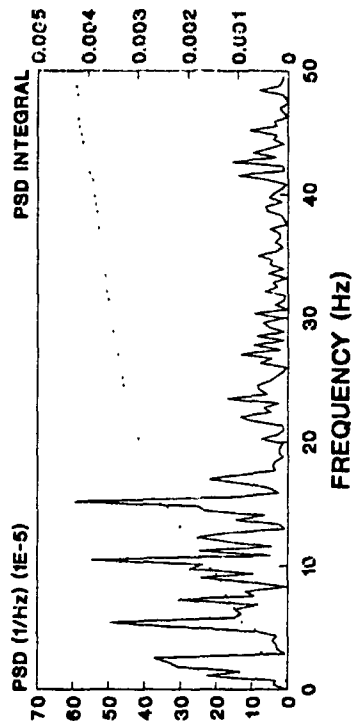
FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

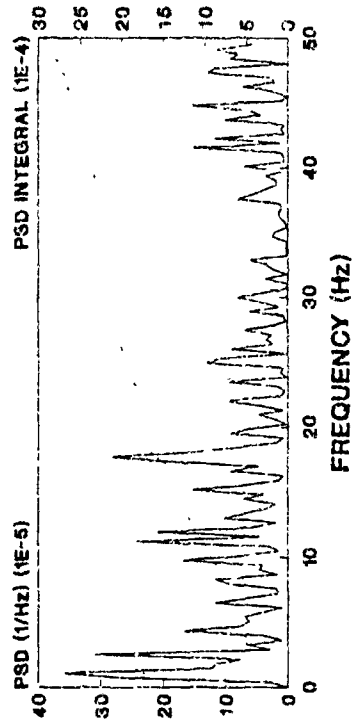
MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

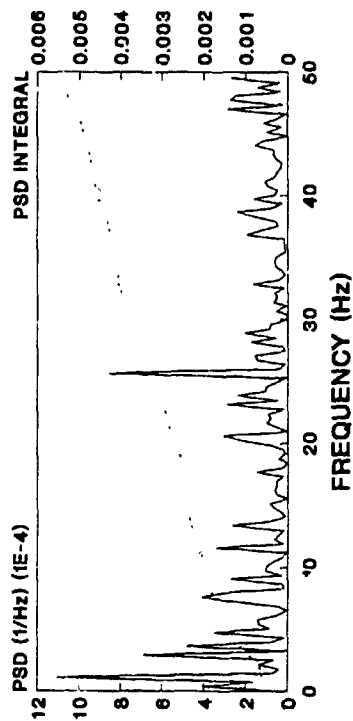
MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

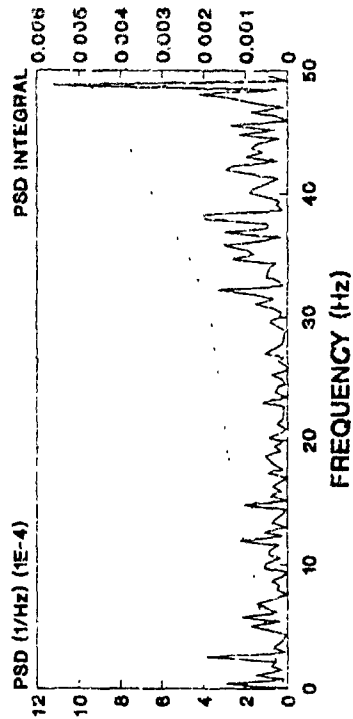
MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

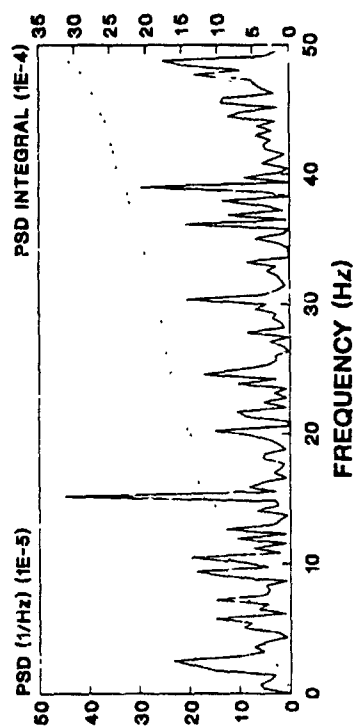
MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



— PSD — PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

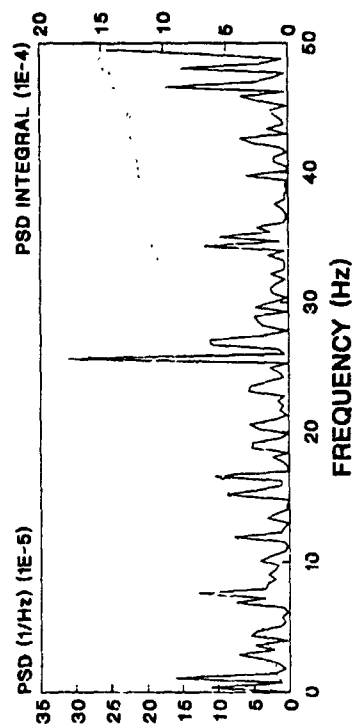
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

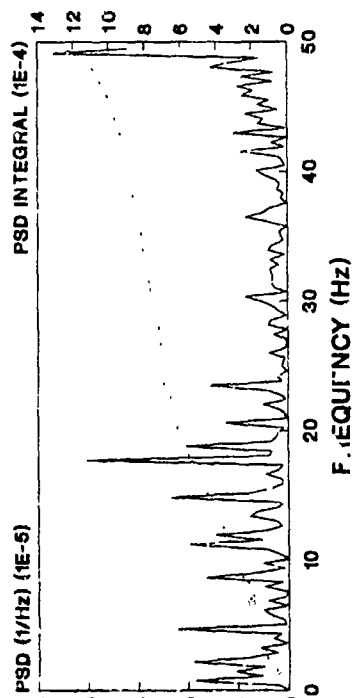
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

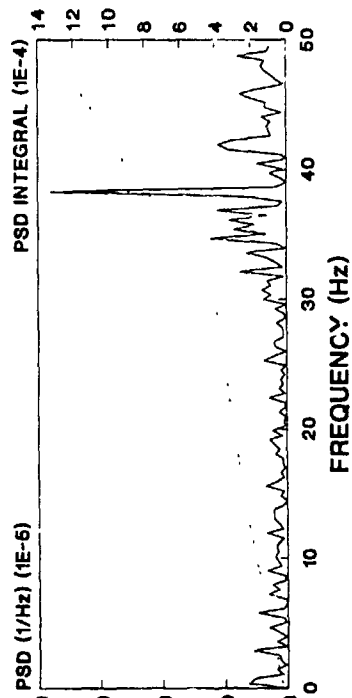
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

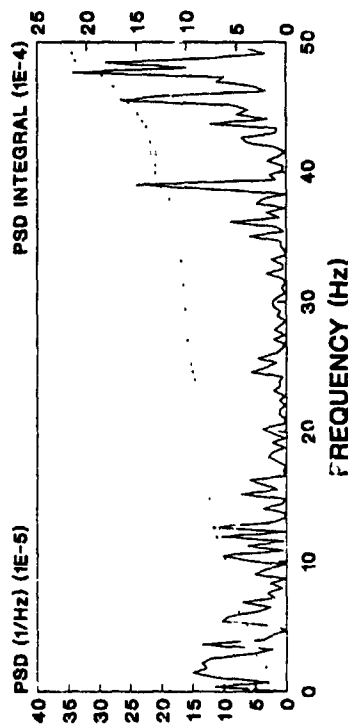
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

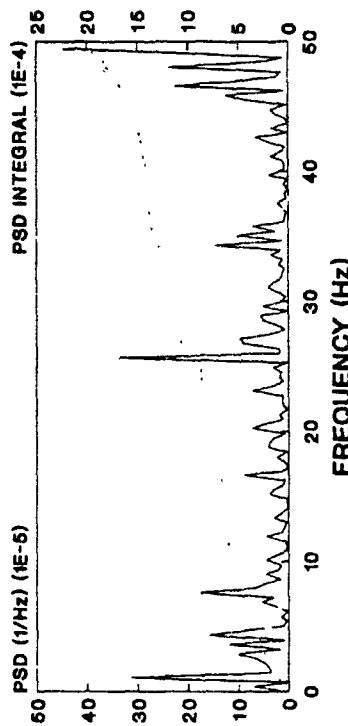
MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

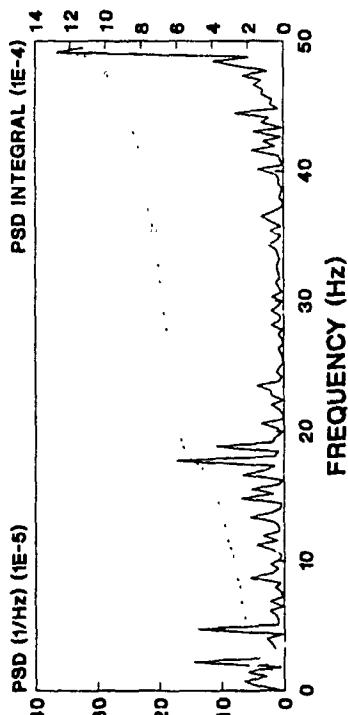
MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

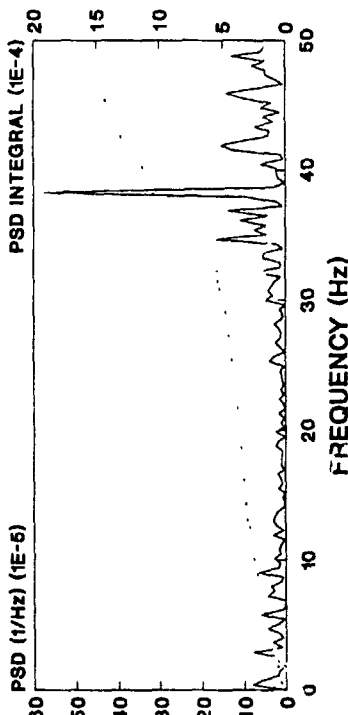
MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 030

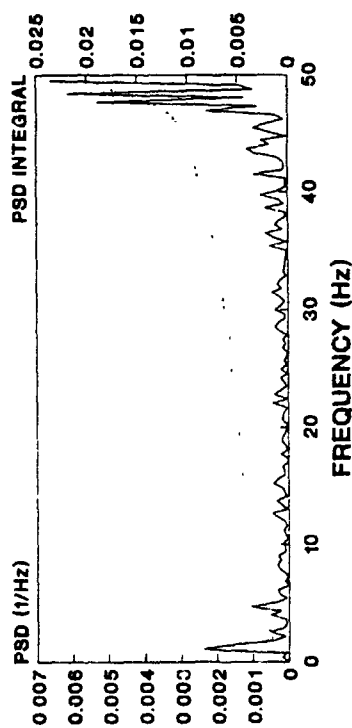
MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

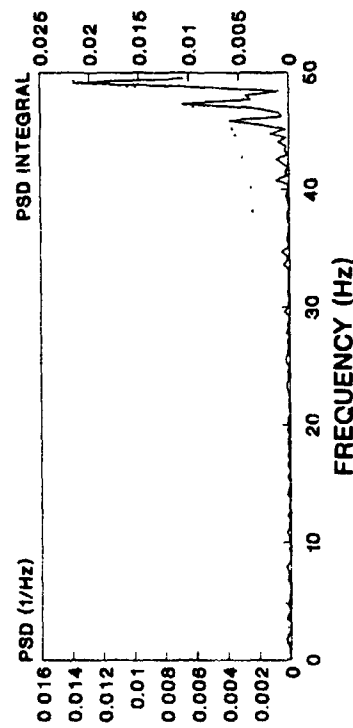
HEXAGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - ROLL **60 FT/SEC NOMINAL**



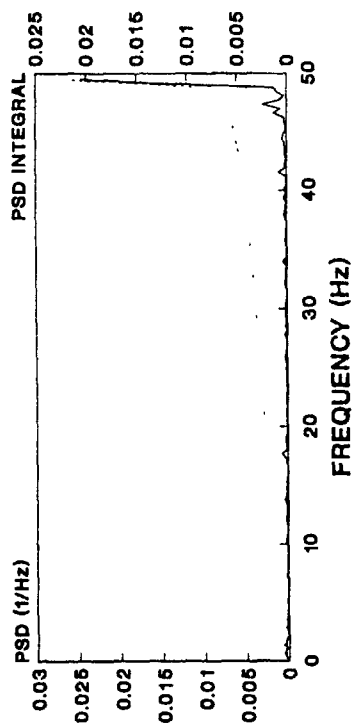
HEXAGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - ROLL **120 FT/SEC NOMINAL**



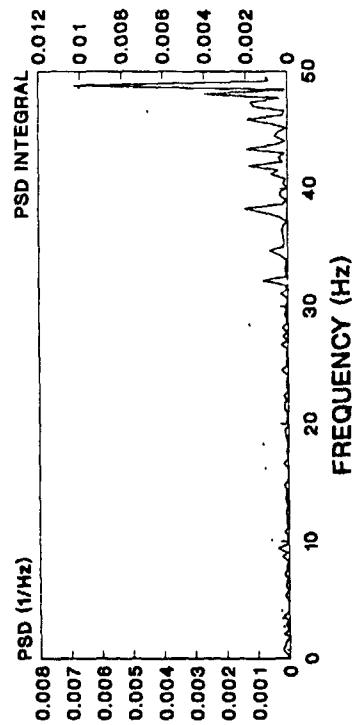
HEXAGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - ROLL **90 FT/SEC NOMINAL**



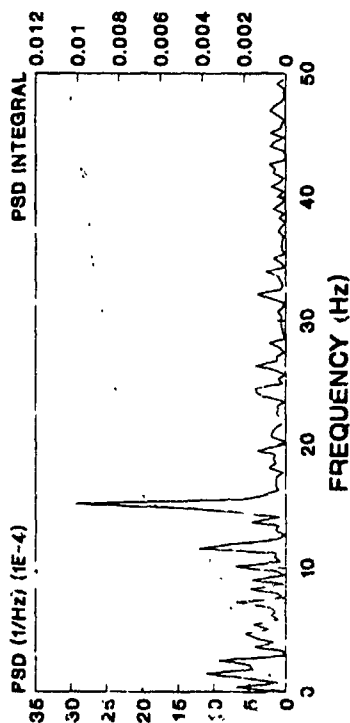
HEXAGON - HT 10.0 - THETA 00 - AZ 030

MOMENT COEFF - ROLL **180 FT/SEC NOMINAL**



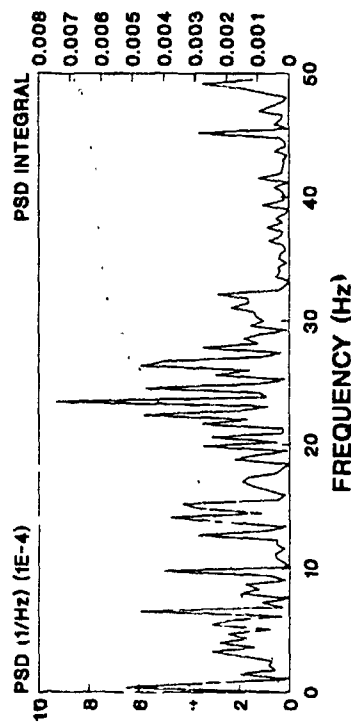
HEXAGON - HT 10.0 - THETA 00 - AZ 030

FORCE COEFF - NORMAL 60 FT/SEC NOMINAL



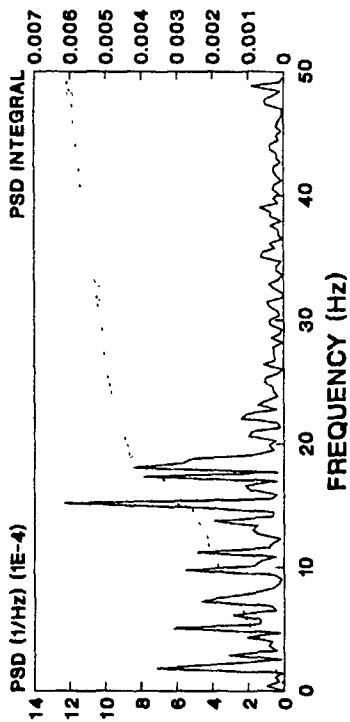
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - NORMAL 120 FT/SEC NOMINAL



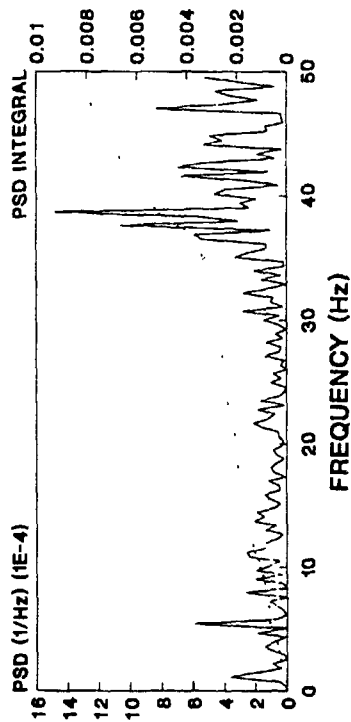
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - NORMAL 90 FT/SEC NOMINAL



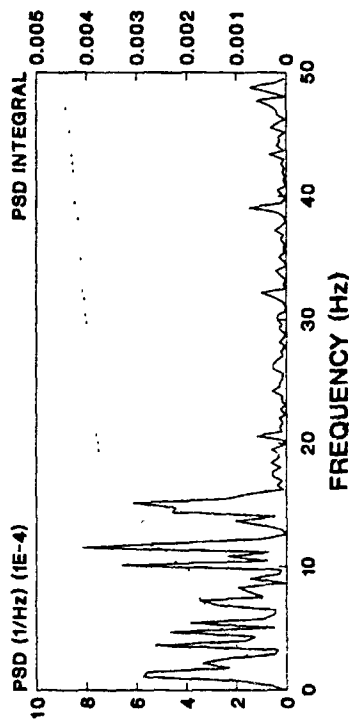
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - NORMAL 180 FT/SEC NOMINAL



HEXAGON - HT 10.0 - THETA 00 - AZ 045

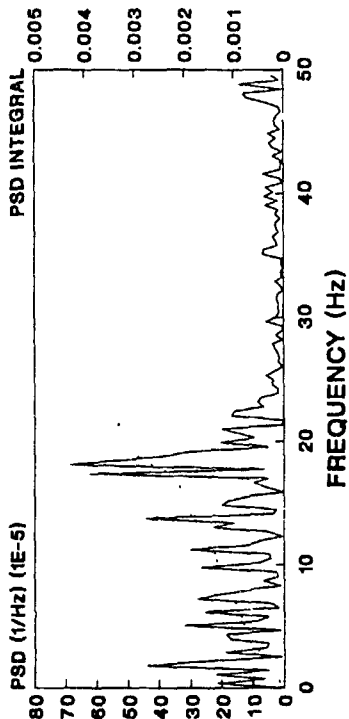
MOMENT COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

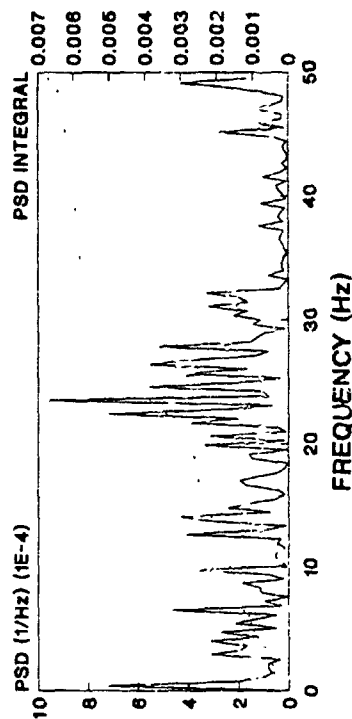
MOMENT COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

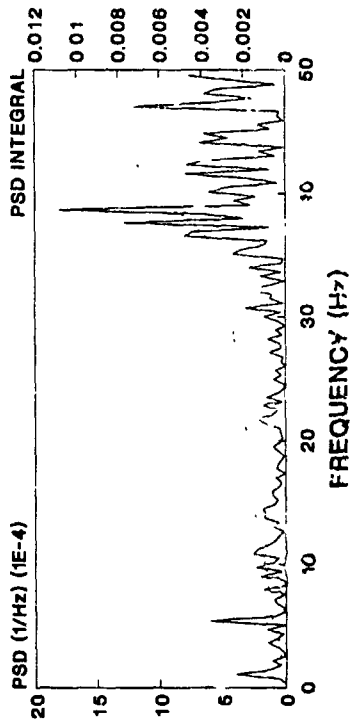
MOMENT COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

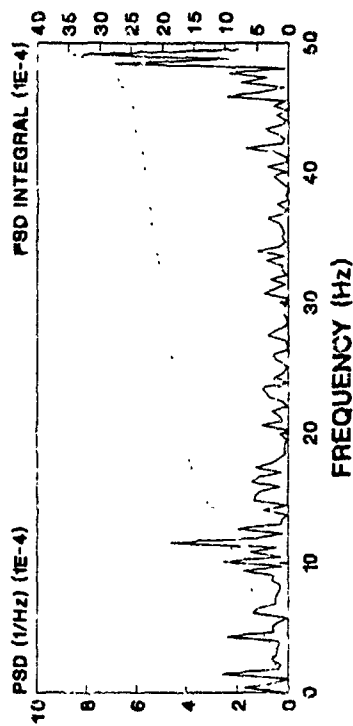
MOMENT COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

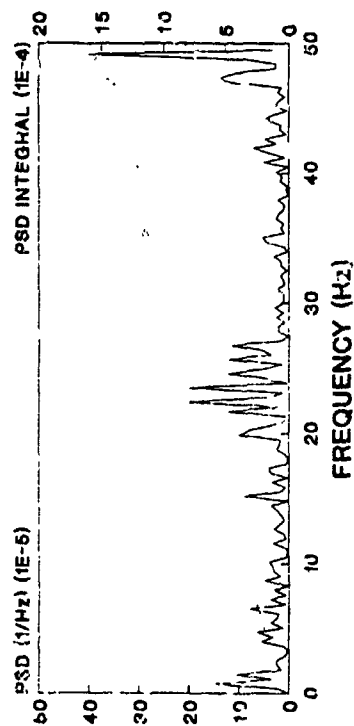
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



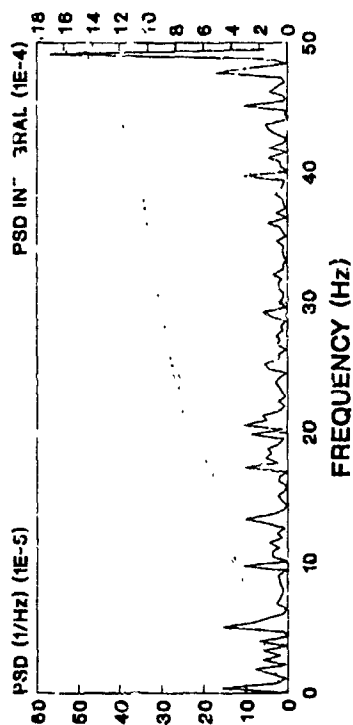
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



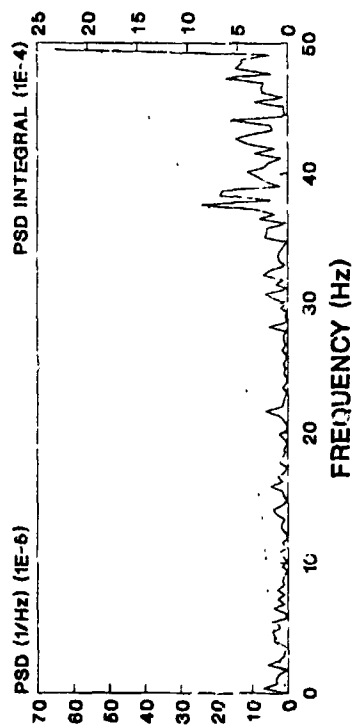
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



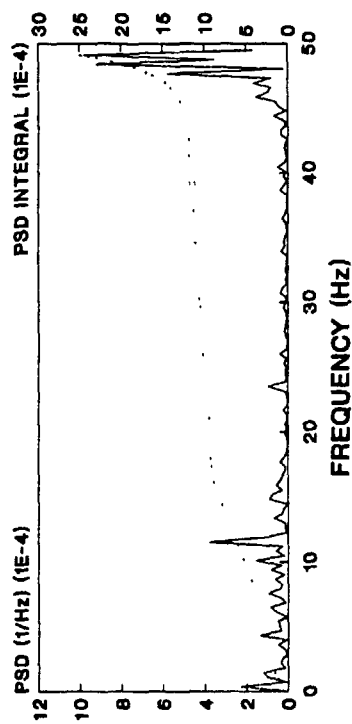
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



HEXAGON - HT 12.0 - THETA 00 - AZ 045

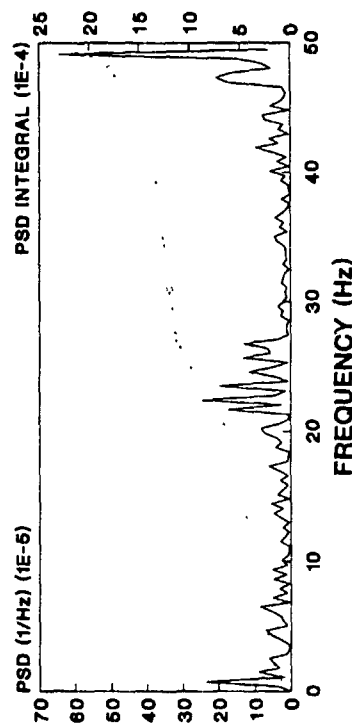
MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

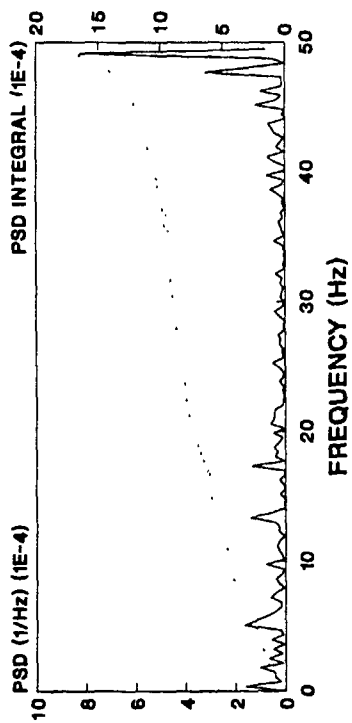
MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

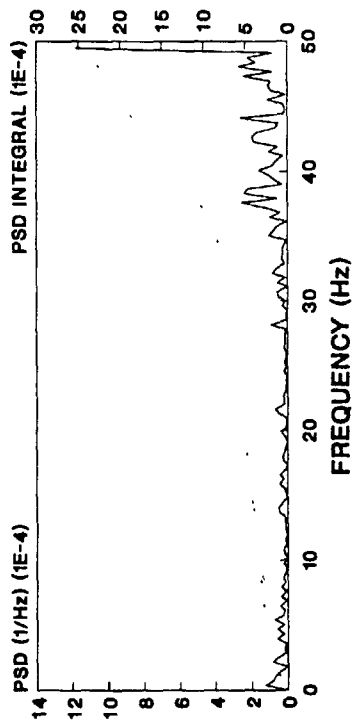
MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 045

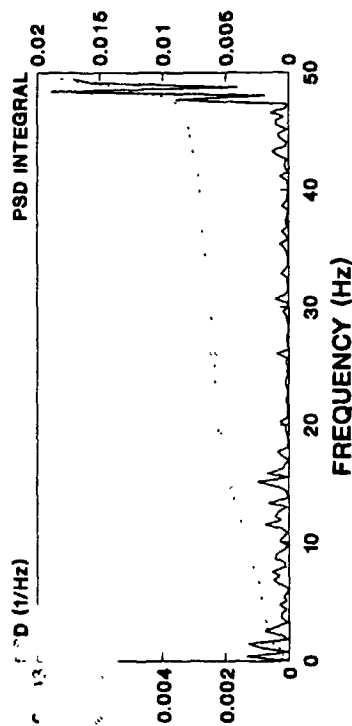
MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

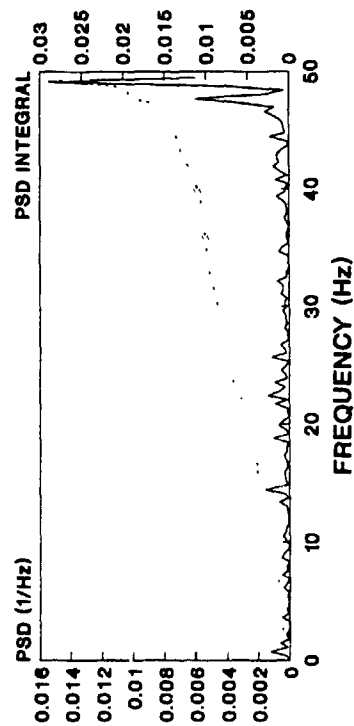
HEXAGON - HT 10.0 - THETA 00 - AZ 045

MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



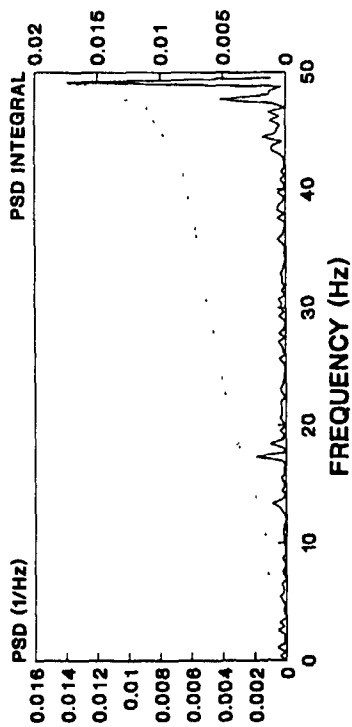
HEXAGON - HT 10.0 - THETA 00 - AZ 045

MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



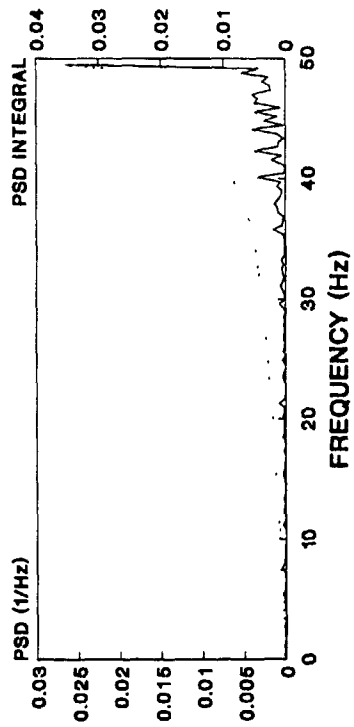
HEXAGON - HT 10.0 - THETA 00 - AZ 045

MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



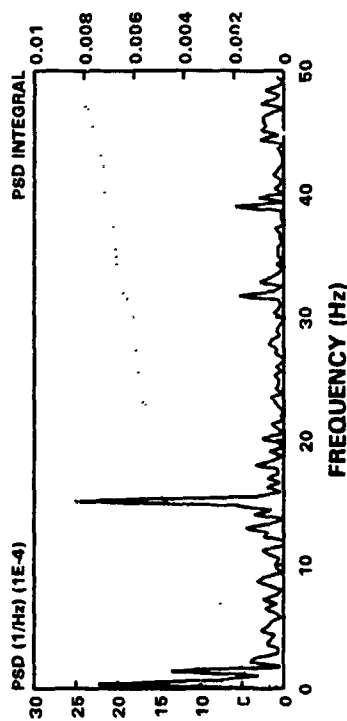
HEXAGON - HT 10.0 - THETA 00 - AZ 045

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



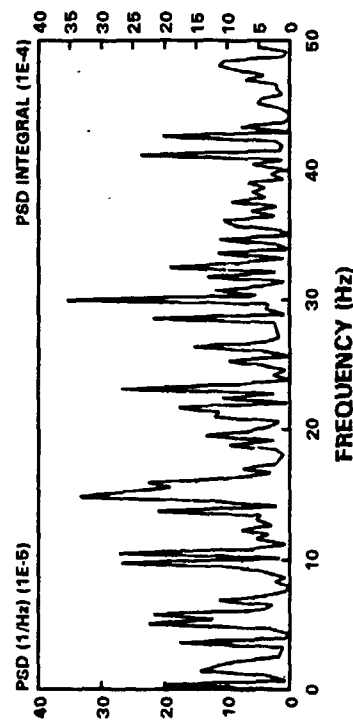
HEXAGON - HT 10.0 - THETA 00 - AZ 045

FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



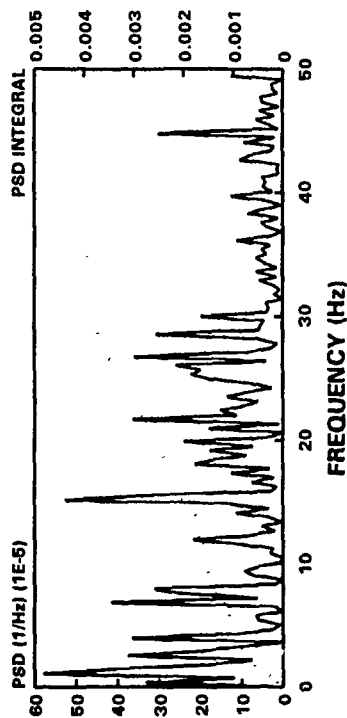
HEXAGON - HT 10.0 - THETA 00 - AZ 080

FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



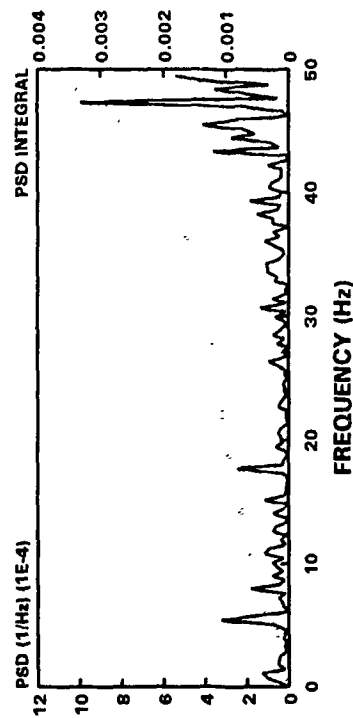
HEXAGON - HT 10.0 - THETA 00 - AZ 080

FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



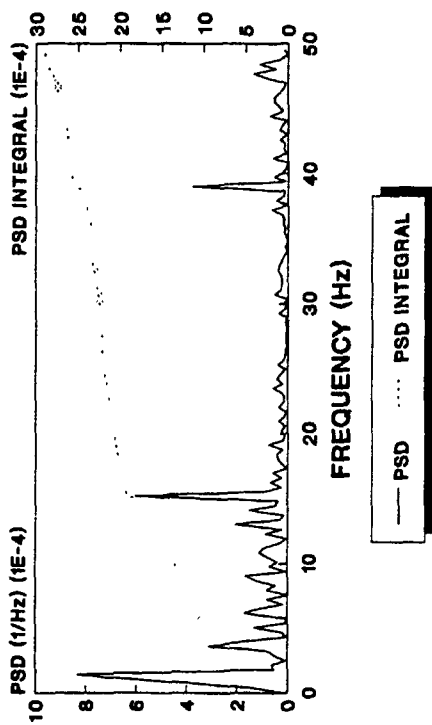
HEXAGON - HT 10.0 - THETA 00 - AZ 080

FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



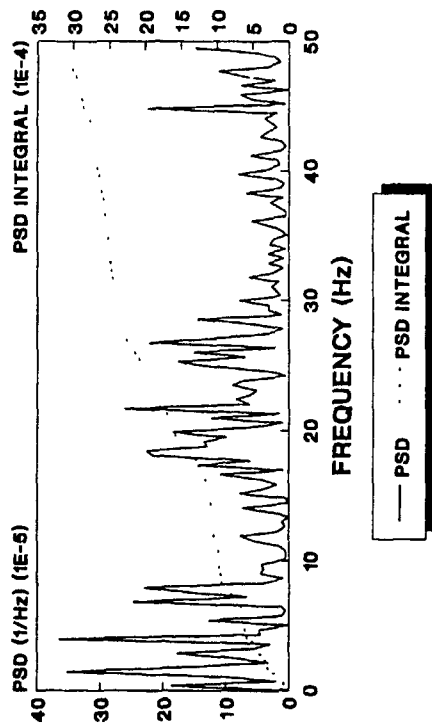
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



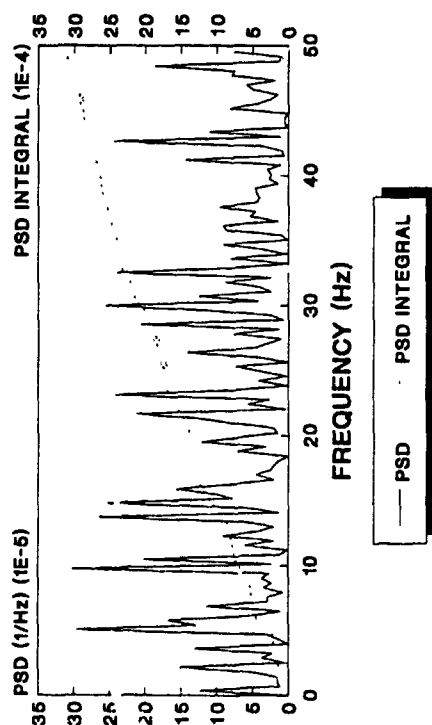
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



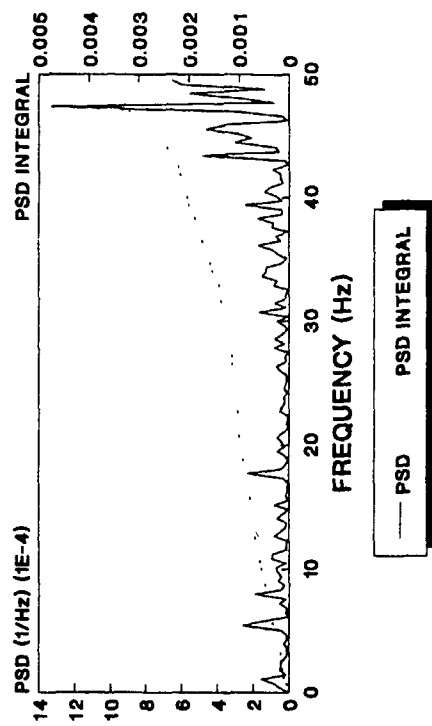
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



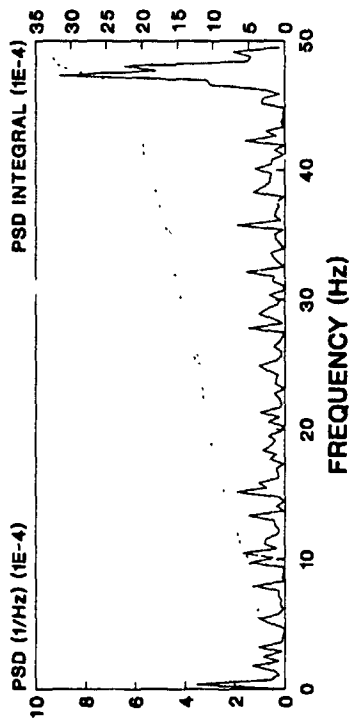
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



HEXAGON - HT 10.0 - THETA 00 - AZ 080

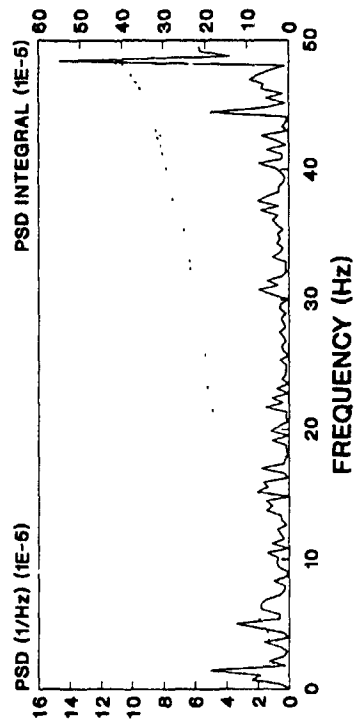
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

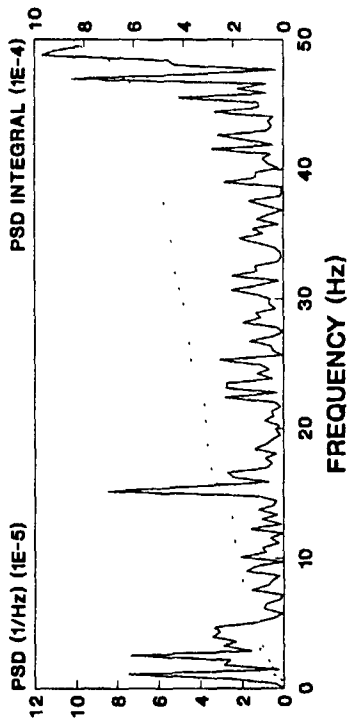
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

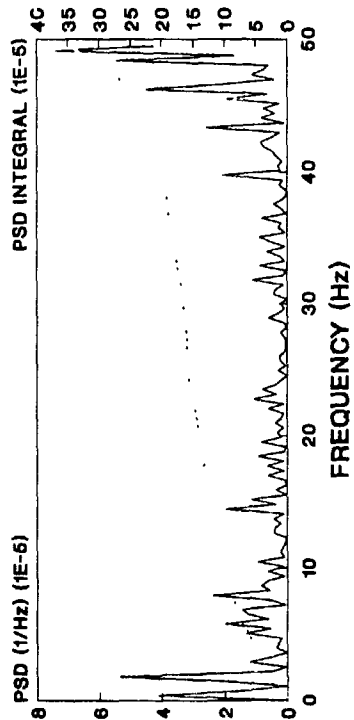
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

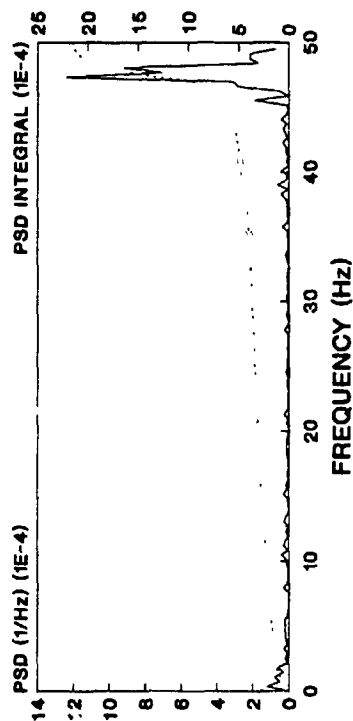
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

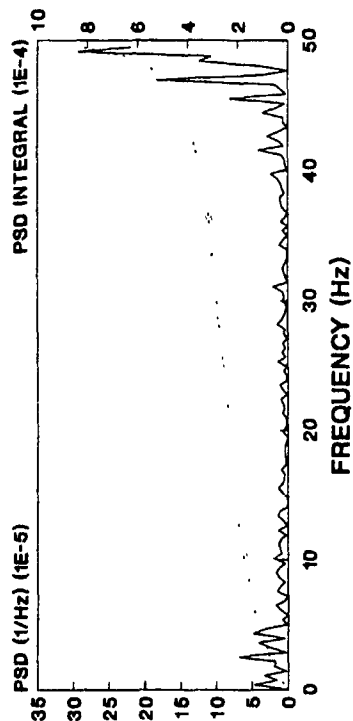
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - LATERAL **60 FT/SEC NOMINAL**



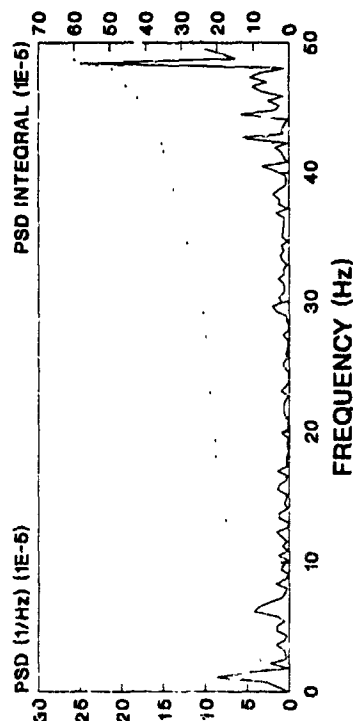
HEXAGON - HT 10.0 - THETA 00 - AZ 060

MOMENT COEFF - LATERAL **90 FT/SEC NOMINAL**



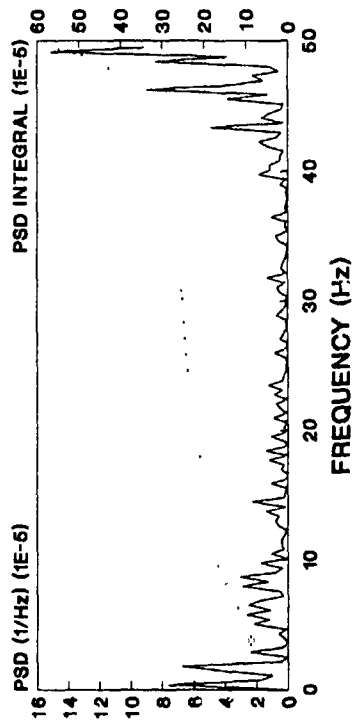
HEXAGON - HT 10.0 - THETA 00 - AZ 080

MOMENT COEFF - LATERAL **120 FT/SEC NOMINAL**



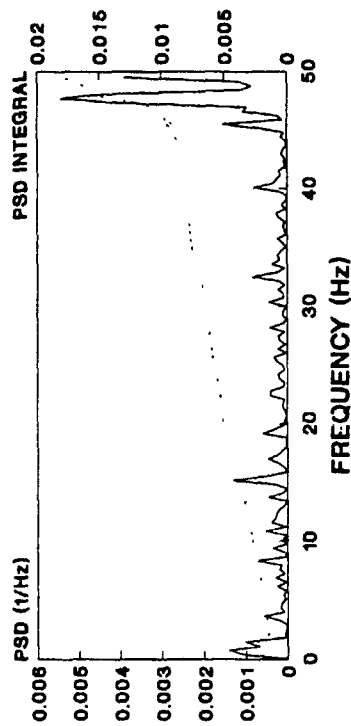
HEXAGON - HT 10.0 - THETA 00 - AZ 060

MOMENT COEFF - LATERAL **180 FT/SEC NOMINAL**



HEXAGON - HT 10.0 - THETA 00 - AZ 080

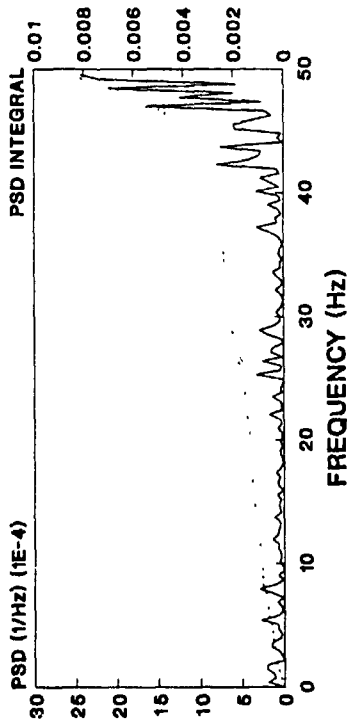
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

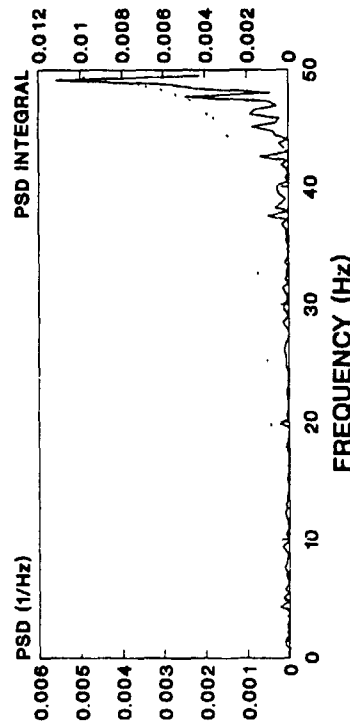
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

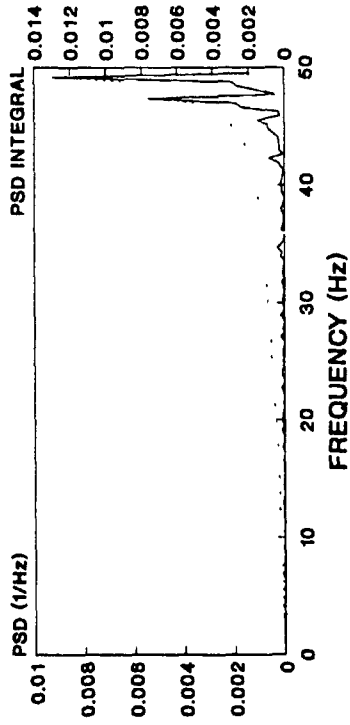
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

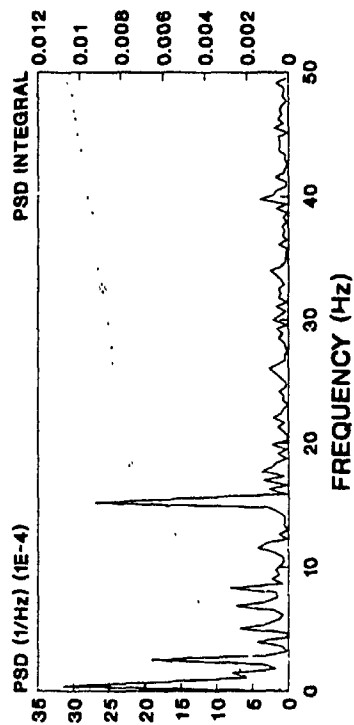
MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD ··· PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 080

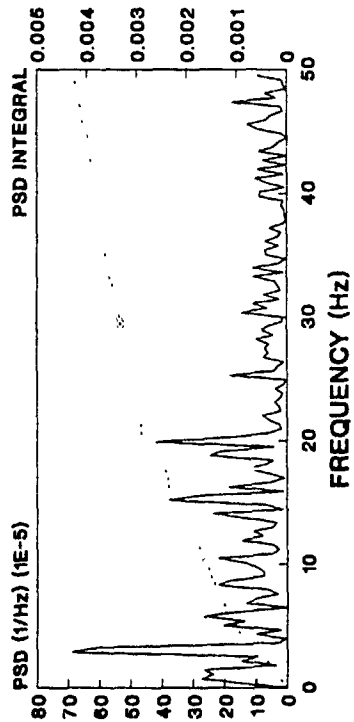
FORCE COEFF - NORMAL **60 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

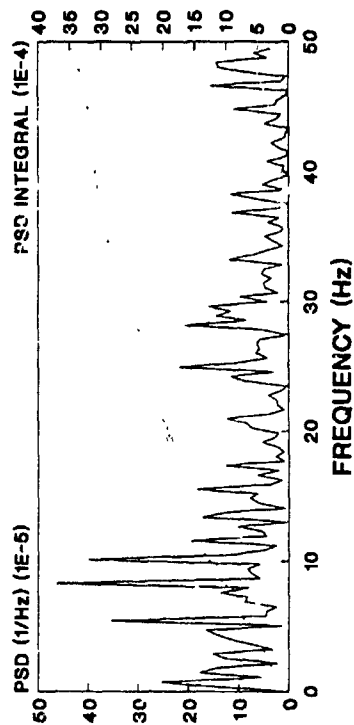
FORCE COEFF - NORMAL **90 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

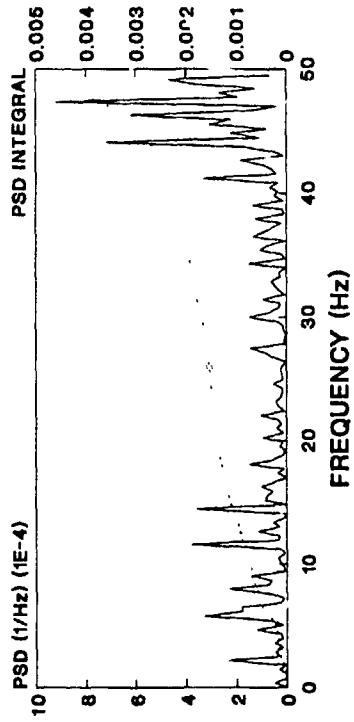
FORCE COEFF - NORMAL **120 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

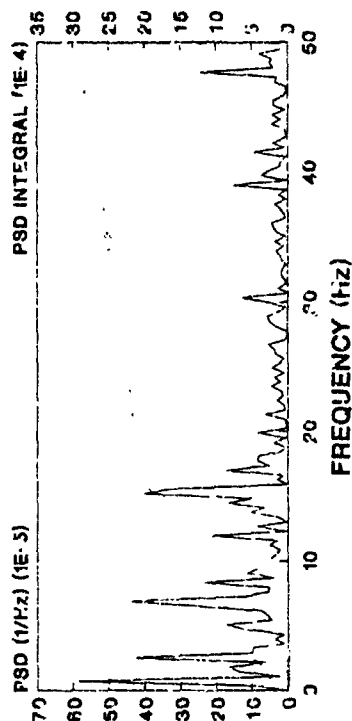
FORCE COEFF - NORMAL **180 FT/SEC NOMINAL**



— PSD - - - PSD INTEGRAL

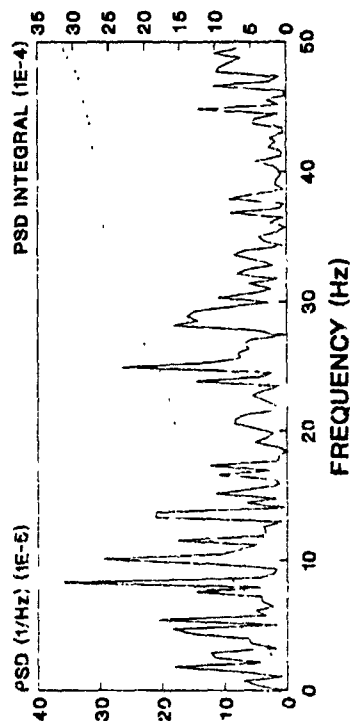
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - NORMAL 60 FT/SEC NOMINAL



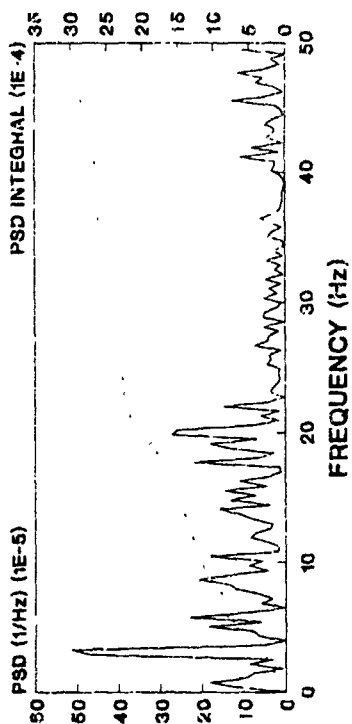
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - NORMAL 120 FT/SEC NOMINAL



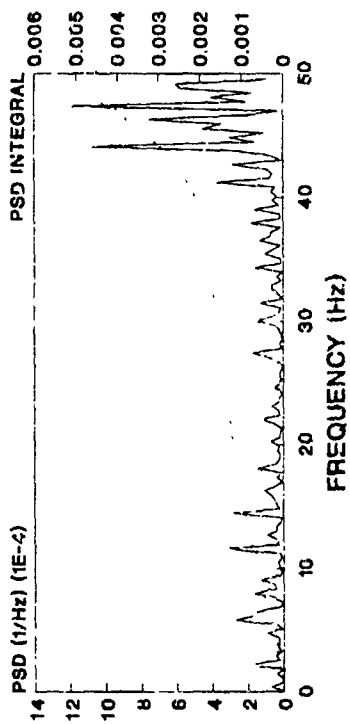
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - NORMAL 90 FT/SEC NOMINAL



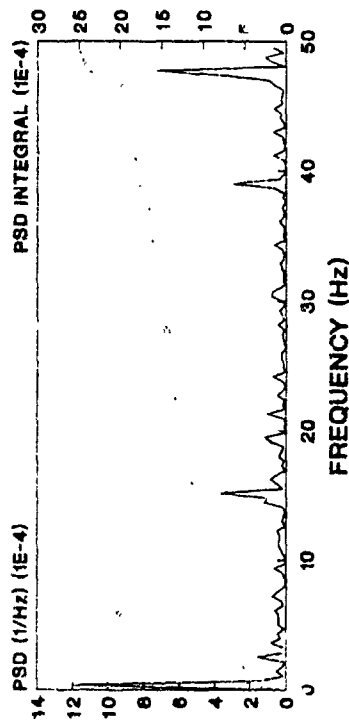
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - NORMAL 180 FT/SEC NOMINAL



HEXAGON - HT 10.0 - THETA 00 - AZ 090

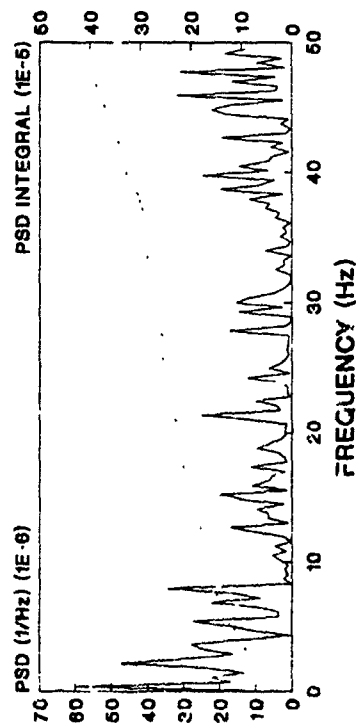
FORCE COEFF - LATERAL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

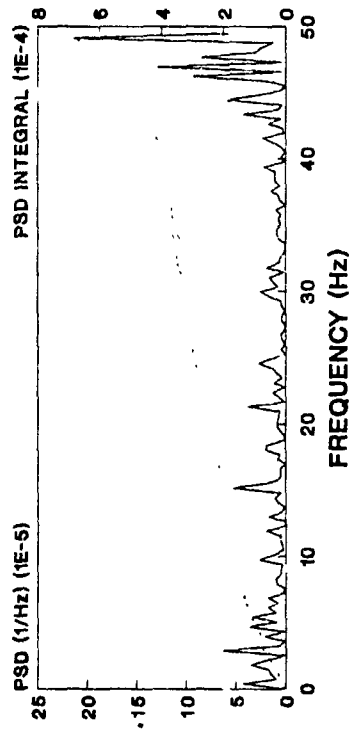
FORCE COEFF - LATERAL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

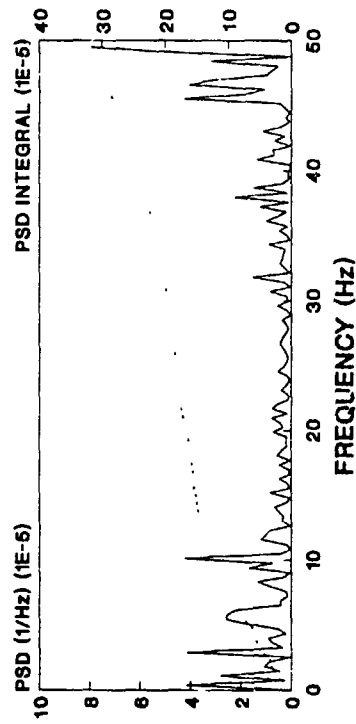
FORCE COEFF - LATERAL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

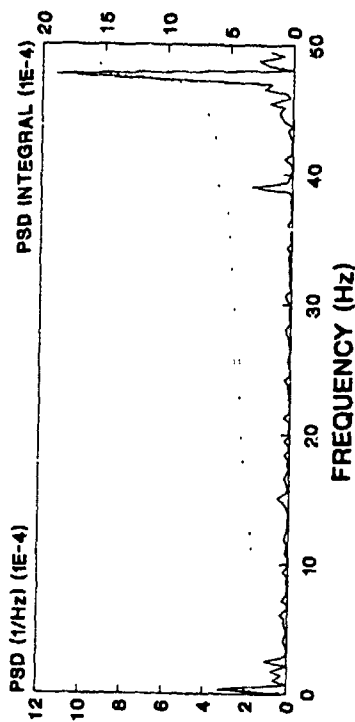
FORCE COEFF - LATERAL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

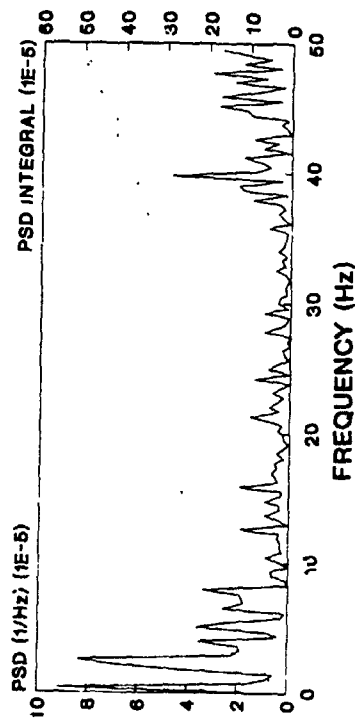
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - LATERAL 60 FT/SEC NOMINAL



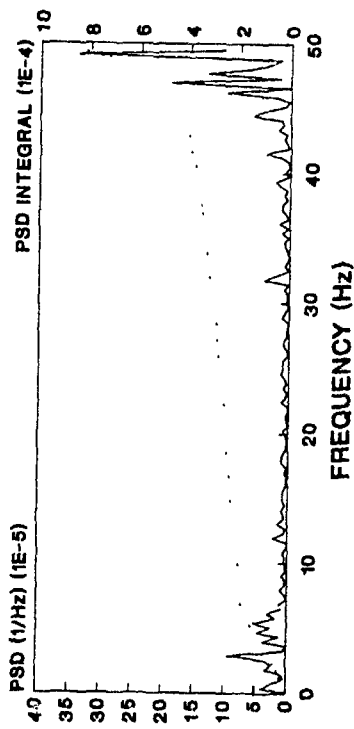
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - LATERAL 120 FT/SEC NOMINAL



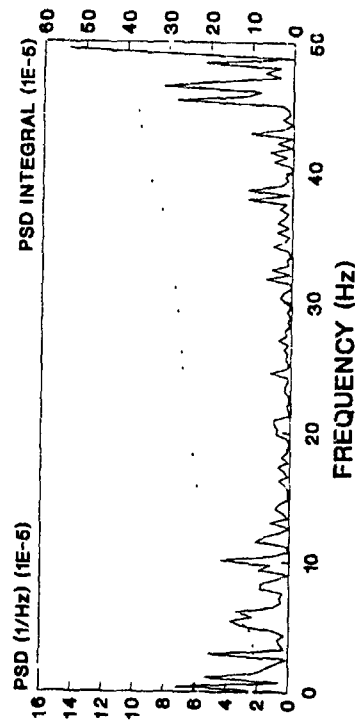
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - LATERAL 90 FT/SEC NOMINAL



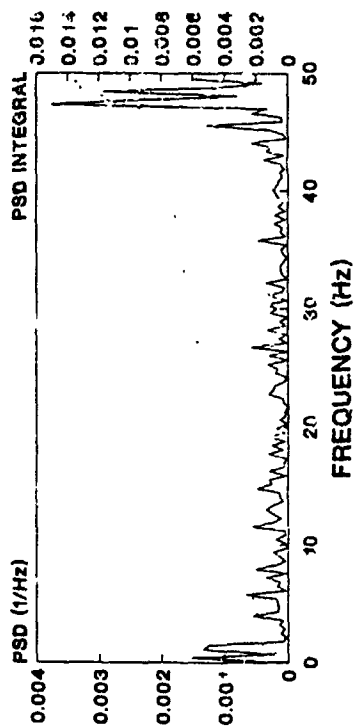
HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - LATERAL 180 FT/SEC NOMINAL



HEXAGON - HT 10.0 - THETA 00 - AZ 090

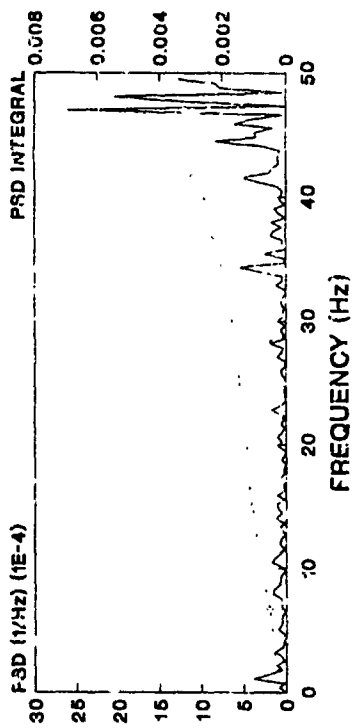
MOMENT COEFF - ROLL 60 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

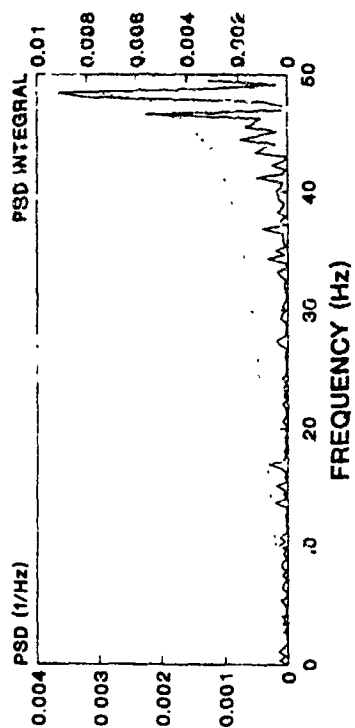
MOMENT COEFF - ROLL 90 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

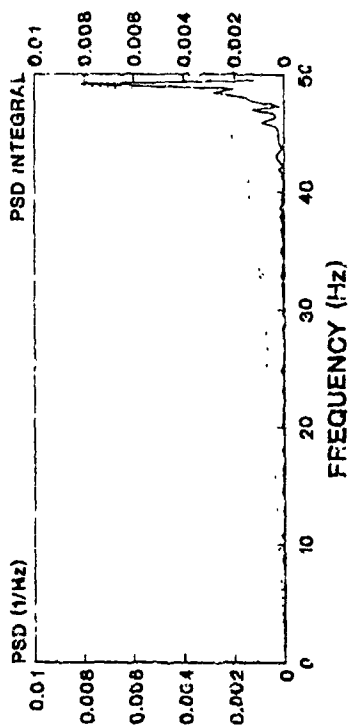
MOMENT COEFF - ROLL 120 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090

MOMENT COEFF - ROLL 180 FT/SEC NOMINAL



— PSD - - - PSD INTEGRAL

HEXAGON - HT 10.0 - THETA 00 - AZ 090